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**The Influence Of Sports Betting, Lottery And Slot Gambling On The Academic Performance Of Students In Public Secondary Schools In Nakuru County, Kenya**

By

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**Abstract**

The aim of the research was to determine the influences of sport betting, lottery and slot gambling on students' academic performance of students in public high schools in Nakuru County, Kenya. Intensity. The study adopted convergent parallel design. The target population comprised public high schools, quality assurance officer, principal and deputy principals, members of disciplinary committees and students. A sample size of 1023 comprising of 769 students from 49 public high schools, 6 Quality Assurance and Standards officers (QASOs), 49 principals and the same number of Deputy Principals and 150 teachers who are members of the disciplinary committees participated in the study. The study discovered that lottery and online gambling had no significance influence on students' academic performance. However, sport betting, slot machine and computer gaming were found to have significant influence on student academic performance. The findings concludes that engagement in gambling does influence students' academic performance and the severity of the same is varied depending on the type of gambling.

**Keywords:** Problem gambling, academic performance, students, slot machines, lottery, sport betting

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**Introduction**

Writings and other artifacts discovered in tombs and other locations testify to the fact that gambling is among the oldest human pastimes. However, the world has witnessed a rapidly changing levels of technology in the last decade and this has certainly changed how people gamble and conduct gambling. Equally, this has further changed to a great extent how students engage in various types of gambling. The growing nature the various of gambling and technology has ushered in a new age where scholars and researcher have sought to conceptualize which type of gambling that students are more engaged in and how it affects their academic performance.

Carbonneau, et. al (2015) carried out a study to investigate how variation of gambling events from youth aged fifteen to thirty years influences the development of certain disorders in children. This was a fifteen-year longitudinal study of a sample of the wide-ranging population. The study identified three distinct trajectories as follows: a high trajectory (8.4% of sample) with an average of four to five activities ranging from 15 to 30 years old; an early-onset low trajectory (64.8% of sample) with one to two distinct activities starting at age 15; and a late-onset low trajectory (26.7% of sample) with gambling starting at age 22. Males (14.2%) were four times more likely than girls (3.5%) to be on a high trajectory. ( $P < 0.001$ ).

The three trajectories showed similar preferences for different kinds of gambling behaviors. Even after controlling for socioeconomic status (SES), Participants on a high trajectory reported higher gambling frequency at ages 15 and 30, as well as higher frequency of problem gambling during adolescence, and were extra likely to experience problem gambling before age 30: 3.09 [95% confidence interval (CI) = 1.66, 5.75] and 2.26 (95% CI = 1.27, 4.04) times more than participants with early and late onset lows, respectively. Early-life involvement in many gambling activities seems to be associated with an increased probability of developing gambling problem. This research underscores the need to investigate the types of gambling activities in order to project the likelihood of the severity of gambling.

In accordance with Mazar et al.'s (2020) findings, there are many types of gambling that may be distinguished based on the criteria specified. However, with digitalization, innovation and the evolvment of science and technology, the line between different forms of gambling is shrinking more and more with many gambling activities becoming available online or online gambling. For example, you can buy a lottery ticket via electronic device, mobile telephone or physical ticket. Due to this classification, an online and offline gambling may occur. However, it may not be possible to distinguish the various forms of gambling and their prevalence. Due to this, the researcher examined their influence based on the broad categorization of their nature: lottery, sports betting, and slot machine. For instance, according to Binde and Volberg (2017). Persons who engage themselves in table games and electronic gambling machines (slot

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machines) in casinos, for instance, have a higher prospect of developing a problem with their gambling than persons who play big-pot lottery games.

Wahlström and Olsson (2023) carried out a study on school survey in Stockholm with data that targeted 5,221 grade 11 students ranging between about 17–18 years in 46 schools. Registers provided information on the makeup of the schools and the student–teacher ratio. Binary variables were used to code gambling and risk gambling. Three basic subjects were used to collect self-reported grades, which were then divided into two categories: average/above average and below average. The research findings revealed gambling and risk gambling were linked to below-average academic achievement, the relationship between gambling and risk. In the fully adjusted model, gambling was only statistically significant at the 10% level. The correlations between school performance and gambling and risk gambling were enfeebled by the student-teacher ratio since these relationships were less noticeable in schools with a low student-teacher ratio.

The study findings concluded that gambling negatively affected academic performance, but this effect can be reduced if the number of teachers is increased. This is an indication that engagement in gambling activities may be dependent on other variables that warrant to be investigated and hence the need to investigate how the different forms of gambling may influence students' academic performance.

In criticizing the Walberg theory of education productivity Darra (2006) notes that productivity should not be mistaken with efficacy and efficiency. He argued that education outputs are primarily represented by teaching and results by learning. The study focused more upon the process through which the efficiency and effectiveness is critical in increasing educational performance rather than examining the few factors as proposed by the theory. It is considered by the researcher that education performance is a result of combination of many factors that may do not necessarily conspire to act in the same way in different cultures and environment. The theory however has a lot of worth in its application to academic performance since it allows the researcher to relate these variables in a pluralistic society and explain how engagement in the various types of gambling activities affect academic performance.

### **Statement of the Problem**

It has been shown by previous worldwide study that certain types of gambling are more severe, and students are more involved than others, consequently affecting students in different equal measure. Research studies findings for example done (Binde and Volberg ,2017, Mazar et al.'s ,2020) have demonstrated that we should focus on the degree of involvement in several distinct gambling events rather than the kind of gambling activity itself.

However, robust research data that explain how different forms are engaged and their harms to individuals' mitigation measures may not be realized current situations. For example, Whiting et al, (2019) findings revealed that different forms of gambling are associated with personality domains and severity of gambling varied depending on the type of gambling the person engaged in. However, the research findings did not study how personality aspects may be used to improve policy, deterrence, and dealing with those gambling disorder. Similarly, Delfabbro and King (2019) noted these challenges in measuring and conceptualizing the harm associated with gambling and indicated the needs of more research on the same.

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In Kenya and many developing countries research on how gambling affect academic performance is still low. Additionally, the available data for example points for unique situation that require to be investigated. FinAccess et al (2022) Nakuru county lead in the country with 25.6 % of adults engaging in gambling in Kenya. With several researches revealing that gambling affect academic performance Mbiriri (2023), Machoka (2020) Mwanza (2018) there is need to examine this since Nakuru County posted dismal KCSE results in comparison to the national mean standard score (MSS) for the years 2018- 2021. There is an urgent need to establish the various forms of gambling the students in public secondary schools are engaged in and how this likely affects their academic performance.

### **Research Questions**

- i. To what extent does involvement in lottery gambling affect academic performance of public secondary school students in Nakuru County Kenya?
- ii. To what extent does involvement in sport betting affect academic performance of public secondary school students in Nakuru County Kenya?
- iii. To what extent does gambling through use of slot machines affect academic performance of public secondary school students in Nakuru County Kenya?

### **Theoretical Framework**

The research study assessed the impact of gambling on academic performance using Walberg's (1981) theory of educational productivity. This was carried out in an effort to address the issues raised by the routine activity idea. Examining particular elements and causes was one of the main goals of this investigation. A number of factors are thought to have a bearing on educational production, in line with Walberg's (1981) theory of educational productivity. A sum of factors is taken into account, including the students' aptitudes and past performance, their drive, their age and phase of development, the amount and caliber of teaching, the classroom situation, the home setting, the peer group, and their exposure to mass media outside of school. There is a connection between each of these components and students' academic performance.

This study was motivated by Walberg's model, which examined the effects of gambling on students' academic performance by examining three important variables: age, ability, and motivation. These variables are representative of the characteristics of the students. The last four parameters—the classroom environment, the home environment, the peer group, and media exposure—highlight the various facets of the psychological environment, while the fourth and fifth variables show the influence that gambling activities have on the amount and quality of instruction.

Walberg's theory served as the base for this study, as it explored the influence of various forms of gambling activities on student academic performance by examining three key variables: ability, motivation, and age, which are revealing of students' characteristics. The fourth and fifth variables explain the effect that various forms of gambling events have on the quantity and quality of teaching and instruction, while the last four variables the classroom climate, the setting at home, the peer group, and the acquaintance to the media acme the many facets of the psychological situations.

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Walberg's theory has found widespread applications in the field of education. For instance, Bruinsma (2007) applied the theory to explain the educational productivity in higher education. The findings imply that the Walberg educational productivity model's several components can accurately forecast students' academic success in postsecondary education. Therefore, the theory provides a strong foundation for examining how academic performance is affected by factors that are linked to the various forms of gambling activities from home, school and societal environment the students find themselves in.

## **Review of Related Literature**

### **Types of Gambling and academic performance**

Many types of gambling like lottery, sport betting, computer gaming, slot machine and other forms of gambling have been postulated as different and may affect academic performance inversely.

### **Influence of Lottery Gambling on Academic performance**

Research findings by Costes et al. (2018) proposed that lotteries are among the most common types of gambling and are responsible for generating significant amounts of income for the state. Additionally, it is suggested that it is one of the types of gambling that is the least hazardous. However, it is worth noting that Costes findings was not in relation to school academic performance since the study was limited to adult population.

Zhai et al (2021) investigated the connections between buying lottery tickets and the severity of gambling issues, along with examining perceptions and attitudes towards gambling. He also explored variations in the associations between the severity of gambling problems and healthy functioning measures as well as gambling characteristics among different groups of lottery purchasers. The research uncovered those adolescents who bought lottery tickets exhibited higher levels of problem gambling severity, more non-judgmental attitudes toward gambling, and higher parental approval of betting when compared to peers who did not purchase lottery tickets. Notably, significant differences between the groups were observed, with non-lottery-purchasing adolescents showing stronger relationships between at-risk-problem gambling and friends and adult gambling partners.

Pisarska and Ostaszewski (2020) conducted a longitudinal study in Poland, focusing on characteristics related to juvenile gambling among adolescents aged 16 to 18. Longitudinal research was conducted among high school students, with a sample size of 511 adolescents. The participants, of whom 57.5% were male, were selected at random from Warsaw's elementary and technical vocational schools.

### **Significance of Sport Betting on Academic Performance**

Lopez-Gonzalez et al. (2017) carried out was to evaluate the influence that the reasons for watching sports and the degree of participation that sports fans have may have on the gambling behavior of people. Using a survey that included 659 sports bettors in Spain, the research reported that individuals who participated in in-play betting exhibited higher levels of



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problem gambling severity, increased sports-watching, and a tendency to consume sports as a means to escape daily concerns.

Research conducted by Espada and Martínez (2021) in Spain, the participants were students from secondary schools and high school TAFAD students who filled out a questionnaire that used South Oaks Gambling Screen. The investigation was conducted in an educational center located in Valencia, Spain. One Hundred and fifty (150) students were included in the sample, with 89 males (59.3%) and 61 females (40.7%). After analyzing the outcomes of this survey, the researchers came to the conclusion that a significant proportion of both males (88.8%) and females (62.3%) engage in the practice of punting on sporting events. In addition, 46 percent of men are of the opinion that betting may be a problem, whilst 39.3 percent of ladies are of the same opinion.

Espadafor and Martínez (2021), who performed study in Spain to investigate the negative impacts of the availability of sports betting options on the development of human capital, the results are in agreement with the previously mentioned research. An analysis of administrative data that gave information on the average grades attained by each school in standardized state-level examinations that are necessary for university entrance was used in the research to evaluate the academic performance of high schools.

### **Influence of Slot Machines Gambling on Academic performance**

Gambling through slot machines is primarily influenced by accessibility and the ease of using machines. These results by Raisamo are supported by Hodgins et al (2012) and Scalese et al (2016), who contend that slot machine gambling is the most widespread and likely the most hazardous kind of gambling.

Giralt et al (2018) did a study in Germany with the primary objective of updating knowledge on the gambling behavior of adolescents. This study especially focused on previously neglected kinds of internet gambling. The main goals were to determine whether teenagers were prone to fulfilling the criteria for problematic gambling and to comprehend the psychological burden linked to this practice. According to the findings of the study, over forty percent of adolescents reported to have participated in gambling activities in the preceding year. The prevalence rates for problematic gambling were found to be 1.7% and 2.2% respectively. Significantly, the usage of slot machines and gambling over the internet was shown to be associated with problematic gambling conditions.

In order to investigate the relationship between individual variances, compulsive gambling, and scratch card gambling in the way that individuals think, Stange et al. (2018) carried out three distinct investigations. The purpose of these studies was to investigate the link between these three types of gambling. The finding showed a substantial correlation between the severity of the gambling issue and the number of times that scratch card games were played.

### **Methodology**

This study used a mixed methods approach, specifically using a convergent parallel design to collect data using both quantitative and qualitative techniques. The two types of data were gathered via phenomenological designs and cross-sectional surveys.

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This study employed a cluster sampling method to investigate engagement of public secondary school students in gambling on their academic performance. The target population included all public secondary schools within Nakuru County. Due to the vastness of the county and the need for intensive analysis, the sampling frame consists of 49 randomly public secondary school from the total population of 348 schools in the Nakuru County. The sampled school served as a cluster, and within these schools, a stratified random sample of students was drawn to ensure representation across different form three students and comparing the school population. This method allows for a practicable yet representative sample, facilitating a complete study of the engagement of gambling affecting student academic performance.

Experts in department of postgraduate evaluated the instruments to ensure their validity. To verify the questionnaire's reliability, the Cronbach Alpha coefficient was used. The students' questionnaire had an alpha value of 0.838. Prior to analysis, the quantitative data that were gathered were cleansed. After that, the survey replies were grouped and given values to code the data. Quantitative information from questionnaires were analyzed using descriptive statistics. Quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS) software version 24.

The process of determining and interpreting broad themes related to concepts, behaviors, and words was employed to code the qualitative data. The results of the quantitative data were presented as percentages and frequencies, and the results of the qualitative data were given as narratives and direct excerpts.

Data collection was from February to March 2023, which in the beginning of the school calendar year in Kenya secondary school. Questionnaires were admitted to students and required to indicate participation the various forms of. These were: Lottery, Sport or football, slot machine, Pool table, card/poker darts, Playing online game and computer gaming.

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**Findings and Discussion**

**Table 1 Distribution of Students on Various Forms of Gambling**

| Variable Form of Gambling                                     | Status  | Frequency | Percent (%) | Valid Percent |
|---|---------|-----------|-------------|---------------|
| 1 In the past 12 months, have you bet/gambled on lottery      | yes     | 141       | 18.34       | 18.8          |
|   | no      | 609       | 79.19       | 81.2          |
|   | Missing | 19        | 2.47        |               |
| 2 In the past 12 months, have you bet/gambled on sport        | yes     | 268       | 34.85       | 35.1          |
|   | no      | 495       | 64.37       | 64.9          |
|   | Missing | 6         | 0.78        |               |
| 3 In the past 12 months, have you bet/gambled on slot machine | yes     | 89        | 11.57       | 11.8          |
|   | no      | 663       | 86.09       | 88.0          |
|   | Missing | 17        | 2.21        |               |
| 4 In the past 12 months, have you bet/gambled on pool table   | yes     | 121       | 15.73       | 15.9          |
|   | no      | 639       | 83.09       | 84.1          |
|   | Missing | 9         | 1.17        |               |
| 5 In the past 12 months, have you bet/gambled on cards        | yes     | 132       | 17.17       | 17.5          |
|   | no      | 624       | 81.14       | 82.5          |
|   | Missing | 13        | 1.69        |               |
| 6 In the past 12 months, have you bet/gambled online game     | yes     | 254       | 33.03       | 33.6          |
|   | no      | 502       | 65.28       | 66.4          |
|   | Missing | 13        | 1.69        |               |
| 7 In the past 12 months, have you bet/gambled computer gaming | yes     | 153       | 19.90       | 20.5          |
|   | no      | 592       | 76.98       | 79.5          |
|   | Missing | 24        | 3.12        |               |
| 8 In the past 12 months, have you bet/gambled not listed      | yes     | 25        | 3.25        | 20.7          |
|   | no      | 96        | 12.48       | 79.3          |
|   | Missing | 648       | 84.27       |               |
|   | Total   | 769       | 100         |               |

Source: Field Data 2023

As indicated in Table 1 in answering the first research question, the participants were to respond on whether or not they had engaged in the past 1 year in any of the following forms of gambling activities: lottery, Sports betting, slot machine, Pool table, card/poker, online game, computer gaming, and any other form of gambling not itemized. The research findings show that in the last one year, lottery participation stood at 141 (18.8%), while 268 (35.1%) students had placed a bet on sport, gambling using slot machine only (89) 12% of the participants gambled using the slot machine as summarized in Figure 11. From the research findings the number of participants is lower if compared to other part of the globe. In UK for instance gambling commission statistics for 2022 revealed that slot machine gambling machines such as penny pusher or claw grab machines was reported at 22%.



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However, the results show that there exists a significant shift in the online and offline different forms of gambling compared to the rest of the world gambling for example analysis by King et al. (2020) of international surveys found that, with significant regional variations, 5–15% of teenager’s gamble online and 40–70% offline. The results do indicate the opposite may be happening in Kenya from the results if the current findings are used. Figure 1 indicates that majority of the online gambling was above the 15%.

### **Types of gambling and Academic Performance**

Additionally, the researcher sought to investigate if there is significance difference based on the mean grade in the previous end of term examination. The students were requested to state their grades that were ranked from the highest to the lowest points A (12 points) A- (11 points) B+ (10 points) B (9 points) B- (8 points) C+ (7 points) C (6 points) C- (5 points) D+ (4 points) D (3 points) D- (2 points) E (1 point). The grade distribution was summarized below

**Table 2: My Mean Grade in the Last End of Term Examination**

| Grade        | Frequency  | Percent    | Valid Percent |
|--------------|------------|------------|---------------|
| A            | 9          | 1.2        | 1.2           |
| A-           | 9          | 1.2        | 1.2           |
| B+           | 45         | 5.8        | 6.1           |
| B            | 17         | 2.2        | 2.3           |
| B-           | 49         | 6.4        | 6.6           |
| C+           | 120        | 15.6       | 16.2          |
| C            | 92         | 11.9       | 12.4          |
| C-           | 124        | 16.1       | 16.7          |
| D+           | 130        | 16.9       | 17.5          |
| D            | 57         | 7.4        | 7.7           |
| D-           | 40         | 5.2        | 5.4           |
| E            | 18         | 2.3        | 2.4           |
| NOT SURE     | 32         | 4.2        | 4.3           |
| Total        | 742        | 96.4       | 100           |
| Missing      | 28         | 3.6        |               |
| <b>Total</b> | <b>770</b> | <b>100</b> |               |

Source: Field Data 2023

The Graphical representation of the grade end of term examination as further shown in figure 1.

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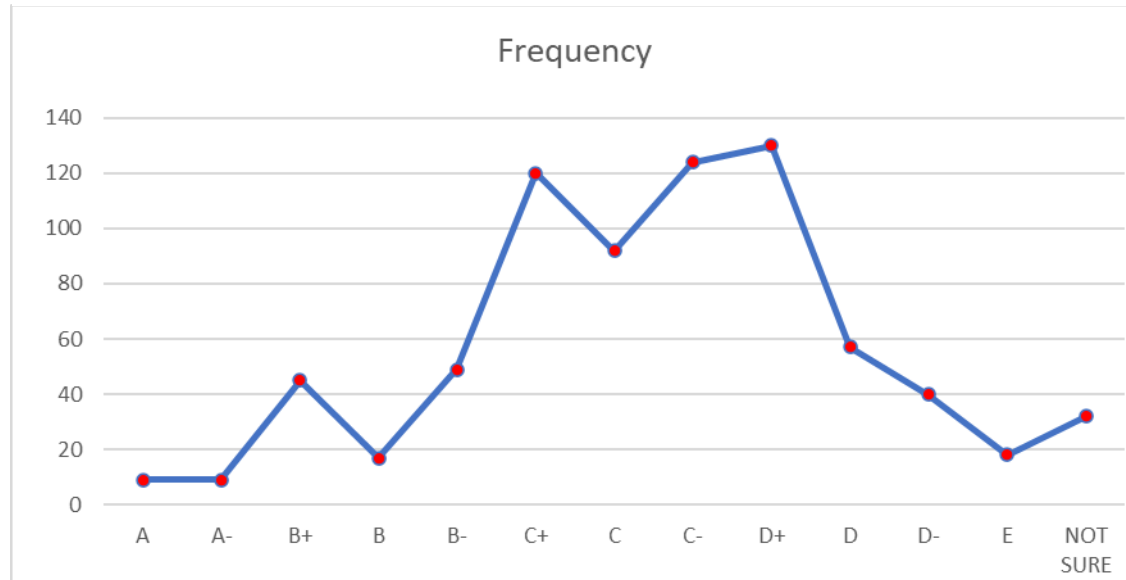


Figure 1: The grade end of term examination

Source: Field Data 2023

To determine if the grades were influenced by the type of gambling. A Mann-Whitney U test was performed to evaluate whether mean of end of examination differed compared with the various forms of gambling. The results for the various types of gambling are as summarized in Table 2.

**Table 1 Mann-Whitney U Test for Various Form of Gambling**

| <b>Form of Gambling</b>         | <b>Significance</b>          | <b>Mann-Whitney U test</b>    |
|---------------------------------|------------------------------|-------------------------------|
| Lottery                         | Non- significance difference | $z = [-1.112], p = [.266]$ .  |
| Sport betting                   | Significance difference      | $z = [-2.173], p = [0.030]$ . |
| Using a slot machine            | Significance difference      | $Z = -2.688], p = [0.007]$ .  |
| Pool table                      | Significance difference      | $z = [-2.216], p = [0.027]$ . |
| Playing card/poker darts        | Significance difference      | $z = [-1.120], p = [0.263]$ . |
| Playing online game             | Non- significance difference | $z = [-.727], p = [0.467]$ .  |
| Computer gaming                 | Significance difference      | $z = [-2.588], p = [0.010]$ . |
| Other forms gambling not listed | Non- significance difference | $z = [-.472], p = [0.637]$ .  |

Source: Field Data 2023

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Lottery and online gaming did not have significance difference between the groups. The finding concurs findings of Ariyabuddhiphongs (2011) who in his review noted that with Lottery winners and gamblers tend to be well-balanced and their life quality seems to improve.

Sport betting, slot machine, pool table, computer gaming and other form of gambling not listed results were significantly different. In a 2020 study by Lopez et al. on In-Play Betting, Sport Broadcasts, and Gambling Severity, bettors reported higher levels of problem gambling severity, participating in sport viewing as a means of escaping daily concerns, and were more likely to consume fast food and indulge in alcohol while watching sports. The study does show that gambling has an impact on academic performance since it lowers the amount and quality of education received. "In a day school is not possible to control what the students are engaged in outside of the classroom. Some students love sports and can contribute to them watch many games, bet at expense of engaging in something more useful to their studies," stated one of the deputy principals in the study in an interview. In similar studies done Latvala et al. (2019) recorded similar findings as they noted that compared to females with average or high GPAs, females with low GPAs were more likely to gamble online and play slots games.

### **Conclusion and Recommendations**

The type of gaming that a student engages in has a bearing on their likelihood of developing a gambling problem. From the study findings has revealed that there is a significant differences academic differences on students engaged in gambling compared to those not engaged in probability of engaging in problematic gambling behavior may be influenced by their level of participation and how closely it relates to intensity.

In the end, the kind of gambling student engages in does act as a determinant in the relationship between forms of gambling and academic performance compared to other forms, lottery, poker, online games and other forms of gambling not listed in the tool administered were not significant when student academic performance of gamblers and non-gamblers. Slot machines, pool, sport betting, computer gaming gambling were reported to be significant different when compared for performance of gamblers and non-gamblers.

The study recommends that educators be sensitized on the negative effects of gambling in order to curb the more student's engagement in gambling and further capacity building be initiated to teachers to assist mentor, counsel and guide those already addicted in gambling.

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