**Foundation of Environmental Quality and Student Well-Being at Home in Public Secondary Schools**

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ABSTRACT

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| Despite increasing attention on the influence of home environments, limited research has examined how specific environmental factors affect student well-being in public secondary schools. This study investigates how different domains of home environmental quality—including air, water, noise, lighting, sanitation, and overall peacefulness—predict student well-being. Using a descriptive-correlational design, the study involved 149 public secondary school students from Manay in the Panabo City Division. Standardized questionnaires were used for data collection, and the results were analyzed using mean, standard deviation, Pearson product-moment correlation, and multiple linear regression. Findings revealed that the overall environmental quality at home was rated very high, while student well-being was rated high. A strong positive relationship was found between environmental quality and student well-being. Among the environmental factors, air and water quality emerged as the strongest predictors of student well-being, followed by noise control and a peaceful home atmosphere. Lighting and ventilation had a marginal effect, while sanitation and cleanliness showed no significant influence. These findings suggest that maintaining clean air and water, reducing household noise, and promoting a peaceful home environment can play a vital role in enhancing the well-being of secondary school students. |

*Keywords*: Environmental Quality, Student Well-Being, Home Environment, Public Secondary School, Panabo City Division, Descriptive-Correlational, Education

1. INTRODUCTION

Student well-being at home plays a critical role in shaping academic success, emotional stability, and overall development. However, many learners face challenges within their home environments that negatively impact their physical, psychological, and emotional well-being. Factors such as household instability, limited space, poor air and lighting quality, noise pollution, and lack of parental support can create conditions that hinder concentration, sleep, and emotional security. These conditions may also increase students’ vulnerability to stress, anxiety, and disengagement from school (Raju, 2024). As education increasingly recognizes the significance of holistic development, the need to address environmental quality at home as a foundation of student well-being becomes more urgent.

In various countries, concerns about student well-being at home have gained attention due to the rising recognition of environmental and social inequalities. In the United States, studies have shown that children living in overcrowded or unsafe homes report lower academic performance and heightened emotional distress (Cross, 2022). In India, poor housing conditions—such as lack of ventilation, clean water, and private study spaces—have been linked to decreased motivation and learning capacity among school-aged children (Charnley, 2022). Similarly, in South Africa, learners in under-resourced communities face multiple home-based stressors, including noise, insecurity, and lack of basic facilities, which compromise their mental health and educational outcomes (Brown, 2024). These examples highlight that student well-being at home is a global concern, requiring collaborative and culturally responsive strategies.

In the Philippines, the well-being of students at home has become increasingly significant, especially following the pandemic that shifted learning from school to home-based modalities (Nanquil, 2022). Many Filipino learners face a range of home-related difficulties such as overcrowding, poverty, domestic responsibilities, and limited access to quiet and safe learning spaces. These environmental stressors contribute to fatigue, low self-esteem, and disengagement from academic tasks. Moreover, the lack of structured support and parental involvement in some households further compromises students’ motivation and emotional balance (Estuya , 2024). As schools return to face-to-face instruction, the residual effects of poor home environments on student well-being continue to manifest in terms of attendance, academic performance, and mental health concerns (Calud et al., 2022).

The foundation of environmental quality—including physical conditions such as space, cleanliness, air quality, safety, and availability of learning resources—directly affects the well-being of students at home (Riva et al., 2022). A safe, well-lit, and organized home environment fosters better concentration, rest, emotional stability, and motivation, all of which are vital for effective learning and psychological resilience (Eaton, 2024). Conversely, poor environmental conditions can lead to discomfort, distraction, and stress, undermining students’ cognitive and emotional functioning (Mahmoud & Jung, 2025). The link between environmental quality and student well-being suggests that efforts to improve learning outcomes must extend beyond the classroom and consider the quality of the home environment as a foundational factor in student success.

While several studies have explored the role of school environments and mental health in education, limited attention has been given to the intersection between home environmental quality and student well-being, particularly in the Philippine public school context. Existing research often focuses on classroom conditions or general socioeconomic factors but fails to holistically examine how specific elements of the home setting contribute to or hinder a student’s well-being. There is also a lack of localized studies addressing how environmental quality at home influences learners in secondary education, especially in underrepresented districts such as Panabo. This gap calls for empirical research that highlights the unique conditions and needs of Filipino learners in their home settings.

This study was conducted to determine the influences of the foundation of environmental quality on student well-being at home in public secondary schools in Panabo District, Division of Panabo City. Specifically, it seeks to examine how factors such as home safety, physical environment, availability of learning resources, and family support systems contribute to students’ psychological, emotional, and academic well-being. Through this investigation, the study aims to provide insights that can inform policies and interventions designed to support student development by improving home-based environmental conditions.

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**Figure 1:** Conceptual Framework of the Study

**1.1 Statement of the Problem**

This study was conducted to determine the influences of the foundation of environmental quality and student well-being at home in public secondary schools in Panabo District, Division of Panabo City. Specifically, it sought answers to the following sub-problems:

1. What is the level of the foundation of environmental quality of the students at home in public secondary schools in terms of:

1.1 Air and water quality,

1.2 Household Sanitation and cleanliness,

1.3 Proper lighting and ventilation, and

1.4 Noise control and a peaceful environment?

2. What is the level of student well-being at home in public secondary schools in terms of:

2.1 Emotional support,

2.2 Physical health and nutrition

2.3 Academic Support?

3. Is there a significant relationship between the level of the foundation of environmental quality and student well-being at home in public secondary schools?

4. Which domains of the foundation of environmental quality significantly influence student well-being at home in public secondary schools?

**1.2 Hypotheses**

The null hypotheses were tested at a 0.05 level of significance:

Ho1. There is no significant relationship between the level of the foundation of environmental quality and student well-being at home in public secondary schools.

Ho2. None of the domains of the foundation of environmental quality significantly influence student well-being at home in public secondary schools.

2. methodology

**2.1 Research Design**

This study employed a non-experimental quantitative research design utilizing the correlational method. This approach was deemed appropriate as it allowed the researcher to examine the degree of association between the foundation of environmental quality and student well-being at home. According to Baguio and Baguio (2025), two variables may appear related because they are both influenced by a third factor or exhibit a shared pattern of variation. In this study, when environmental quality factors and student well-being indicators tend to vary together, the presence or level of one may suggest or predict the presence or level of the other. The correlational method was suitable for understanding how aspects of the home environment are linked to students’ well-being in public secondary schools in the Panabo District, Division of Panabo City.

**2.2 Research Respondents**

The respondents of this study were 149 out of 237 learners from Manay Panabo, Panabo City Division, drawn from the total population of learners in the district. In selecting the respondents, the researcher identified the population using Slovin’s Formula. The respondents were selected by drawing lots from each section. Random sampling was used to determine the respondents of the study. The selected learners were distributed among the schools in the area. The inclusion criteria were as follows: the learners must have come from small to medium-sized schools in Manay Panabo, Panabo City Division. Each learner was of the same grade level and the same chronological age, as expected. Only learners who successfully completed the grade level without repeating were included in this study.

**2.3 Research Instrument**

The instruments used in this study were self-constructed survey questionnaires developed to assess the foundation of environmental quality and student well-being at home among public secondary school students in the Panabo District, Division of Panabo City. These instruments were designed by the researcher, drawing from existing literature and prior studies related to home environmental conditions and adolescent well-being. To ensure the relevance and appropriateness of the items, the draft questionnaires underwent face and content validation by a panel of experts in the fields of educational management, environmental studies, and child development. Based on the experts’ feedback, necessary modifications were made to improve item clarity, content accuracy, and alignment with the research objectives.

To establish the instruments’ reliability and validity, a pilot test was conducted involving 30 students from a public secondary school outside the sample group but within the same division. The reliability results yielded high internal consistency, with a Cronbach’s Alpha of 0.882 for the Environmental Quality subscale and 0.902 for the Student Well-Being subscale.

**2.4 Data Gathering Procedure**

# The data for this study were gathered through the following procedures:

# The researcher first obtained an endorsement from the Dean of the Graduate School of Rizal Memorial Colleges and subsequently secured ethical clearance from the institution’s Ethics Review Committee to uphold the rights, dignity, and well-being of all participants. After securing these approvals, a formal request letter was submitted to the Office of the Schools Division Superintendent of Panabo City. Upon approval, an endorsement letter was issued to the School Heads of the selected public secondary schools in the Panabo District, along with a request for permission to conduct the study in their respective institutions.

# Following administrative approval, the researcher scheduled a pilot test to assess the reliability and validity of the survey instruments, which were designed to measure the foundation of environmental quality and student well-being at home. The pilot test included a brief explanation of the study's purpose and clear instructions on how to complete the questionnaire. Based on the results and feedback from the pilot, necessary revisions were made to finalize the instrument.

# Once validated, the survey questionnaires were distributed to all identified respondents using Slovin’s formula to determine the appropriate sample size. Participants were informed of the voluntary nature of their involvement, and questionnaires were administered with strict confidentiality. After completion, the researcher personally retrieved the accomplished surveys for processing. The collected data were then forwarded to a statistician for tallying, tabulation, analysis, and interpretation in accordance with the study’s objectives.

# 2.5 Data Analysis

To analyze the data collected and address the research questions of this study, the following statistical tools were employed:

Mean. This was used to measure the level of the foundation of environmental quality and the level of student well-being at home in public secondary schools. It provided a general overview of respondents’ perceptions across each item and domain of the variables studied.

Pearson Product Moment Correlation Coefficient (Pearson r). This was employed to determine the degree of relationship between the foundation of environmental quality and student well-being at home. It identified whether a statistically significant linear correlation existed between the two variables.

Multiple Regression Analysis. This was utilized to assess the extent to which the domains of the foundation of environmental quality significantly influenced student well-being at home. It helped determine which specific environmental factors served as strong predictors of student well-being.

3. results and discussion

**3.1 Level of Foundation of Environmental Quality at Home among Public Elementary School Teachers**

Table 1. *Level of Foundation of Environmental Quality at Home among Public Elementary School Teachers*

|  |  |  |  |
| --- | --- | --- | --- |
| **Domains** | **SD** | **Mean** | **Descriptive Level** |
| Air and Water Quality | 0.45 | 4.15 | High |
| Household Sanitation and Cleanliness | 0.44 | 4.26 | Very High |
| Proper Lighting and Ventilation | 0.43 | 4.32 | Very High |
| Noise Control and a Peaceful Environment | 0.36 | 4.07 | High |
| **Overall** | **0.33** | **4.20** | **Very High** |

Presented in Table 1 is the overview of the domains in the level of foundation of environmental quality at home among public elementary school teachers, based on the mean scores and standard deviations. Among the domains, proper lighting and ventilation received the highest mean of 4.32, categorized as very high, closely followed by household sanitation and cleanliness with a mean of 4.26, also described as very high. Air and water quality scored a mean of 4.15, categorized as high, while noise control and a peaceful environment obtained the lowest mean of \*4.07, yet still rated as high. The overall mean of 4.20, categorized as very high, indicates that public elementary school teachers generally maintain a strong foundation of environmental quality in their home settings. The overall standard deviation of 0.33 reflects a fairly consistent perception among respondents, with most ratings closely aligned around the mean.

This result suggests that teachers prioritize creating a well-maintained, healthy, and comfortable home environment, which likely supports their well-being and productivity. Emphasizing all domains collectively can further improve the quality of the home environment, promoting greater health, comfort, and peace essential for their personal and professional lives.

This result aligns with the study of Barani (2024), who emphasized that the overall environmental quality at home, particularly clean air and safe water, plays a vital role in promoting students’ physical health and emotional well-being. According to their findings, students who live in homes with good air circulation and access to clean water tend to exhibit improved focus, fewer health-related issues, and a more stable mood, all of which contribute to a supportive learning environment. Similarly, Leonidis et al. (2021) found that a clean and organized household, along with proper lighting and ventilation, enhances students’ ability to manage tasks, reduces stress, and supports better sleep and concentration. Moreover, Liang et al. (2024) highlighted that noise control and a peaceful home atmosphere significantly affect students’ mental well-being. They noted that students in calm and quiet environments are less likely to experience distractions and anxiety, allowing them to focus more effectively on their studies and maintain a positive disposition at home.

**3.2 Level of Well-Being at Home among Public Secondary School Students**

Table 2. *Level of Well-Being at Home among Public Secondary School Students*

|  |  |  |  |
| --- | --- | --- | --- |
| **Domains** | **SD** | **Mean** | **Descriptive Level** |
| Emotional Support | 0.29 | 4.29 | Very High |
| Physical Health and Nutrition | 0.46 | 4.10 | High |
| Academic Support | 0.31 | 3.99 | High |
| **Overall** | **0.23** | **4.13** | **High** |

Presented in Table 2 is the domains in the level of well-being at home among public secondary school students, based on the mean scores and standard deviations. The domain of emotional support received the highest mean of 4.29, categorized as very high, indicating that students feel a strong sense of emotional care and connection within their home environments. this is followed by physical health and nutrition with a mean of 4.10, and academic support with a mean of 3.99, both falling under the high descriptive level. The overall mean of 4.13, categorized as high, reflects a generally positive state of well-being among students at home. The relatively low overall standard deviation of 0.23 suggests that students’ experiences are consistently similar, with responses closely clustered around the average.

This finding implies that while emotional support is a strong and consistent aspect of students’ home lives, there remains room for improvement in physical health, nutrition, and academic support. Ensuring balanced development in these areas can contribute to better overall student well-being. Strengthening home environments with holistic support can further reinforce students' emotional stability, academic success, and physical well-being, all of which are vital for their overall growth and resilience.

This result affirms the importance of the overall Level of Well-Being at Home, particularly in the areas of emotional support, physical health and nutrition, and academic support, in promoting students’ holistic development and school success. As emphasized by Xin et al. (2024), emotional support within the household provides students with a sense of belonging and security, which enhances their self-esteem and ability to cope with academic and personal stressors. Their study found that when students feel emotionally supported, they are more likely to develop resilience and maintain a positive outlook on learning. Likewise, Henrietta (2023) found that proper nutrition and physical well-being are critical for maintaining students’ focus, energy, and mental health. According to their research, a healthy body supports cognitive functions and emotional regulation, allowing students to engage more actively in their academic responsibilities. Moreover, Saadu (2023) highlighted that academic support at home, such as guidance in schoolwork and encouragement from family members, directly impacts students’ motivation, discipline, and academic performance. Their study concluded that a home environment that values education reinforces positive study habits and a strong commitment to learning.

**3.3 Significant Relationship Between the Foundation of Environmental Quality and Student Well-Being at Home in Public Secondary Schools**

Table 3. *Significant Relationship Between the Foundation of Environmental Quality and Student Well-Being at Home in Public Secondary Schools*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Mean** | **SD** | **R** | **R²** | **Degree of Relationship** | **p-value** | **Decision** |
| Foundation of Environmental Quality | 4.20 | 0.33 | 0.731 | 0.534 | High | 0.000 | Reject Ho1 |
| Student Well-Being | 4.13 | 0.23 |  |  |  |  |  |

Presented in Table 3 is the correlation analysis between the foundation of environmental quality and student well-being at home in public secondary schools. The results reveal a correlation coefficient (r) of 0.731 with a p-value of 0.000, which is below the 0.05 level of significance. This indicates a high and statistically significant positive relationship between the foundation of environmental quality and student well-being at home. The coefficient of determination (R²) is 0.534, suggesting that approximately 53.4% of the variation in student well-being at home can be explained by the level of environmental quality provided by the school foundation. Given that the p-value is less than 0.05, the null hypothesis (Ho1) is rejected, supporting the claim that a significant relationship exists between the two variables.

This finding implies that a strong environmental quality foundation, potentially including clean, safe, and supportive school conditions, significantly contributes to the well-being of students in their home environments. Enhancing environmental quality within schools may, therefore, foster not only academic success but also promote better emotional, psychological, and physical well-being among students, even outside of the school setting.

This result is consistent with the study of Naragatti and Vadiraj (2023), who emphasized that a strong foundation of environmental quality at home, including clean air, water, and a well-maintained living space, greatly contributes to students’ well-being. Their research found that students who live in clean, safe, and healthy environments exhibit better emotional balance, improved concentration, and higher levels of comfort in their daily routines. Similarly, Zhang et al. (2022) highlighted that the physical condition of the home environment, such as proper sanitation, lighting, and ventilation, supports not only physical health but also mental clarity and a sense of safety. Moreover, Porteous (2022) concluded that peaceful and noise-free home environments promote calmness and reduce psychological stress among learners. They emphasized that a quiet and organized space at home enables students to manage school-related tasks more effectively, contributing to their overall sense of well-being.

**3.4. Significant Influence of the Domains of Foundation of Environmental Quality on Student Well-Being at Home in Public Secondary Schools**

**Table 4.** *Significant Influence of the Domains of Foundation of Environmental Quality on Student Well-Being at Home in Public Secondary Schools*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Domains** | **B** | **BE** | **Beta** | **t-stat** | **p-value** | **Decision** |
| Constant | 1.976 | 0.187 |  | 10.561 | 0.000 | Significant |
| Air and water quality | 0.223 | 0.047 | 0.435 | 4.765 | 0.000 | Significant |
| Household sanitation and cleanliness | 0.070 | 0.048 | 0.131 | 1.458 | 0.147 | Not Significant |
| Proper lighting and ventilation | 0.077 | 0.044 | 0.142 | 1.770 | 0.079 | Significant |
| Noise control and a peaceful environment | 0.146 | 0.038 | 0.225 | 3.831 | 0.000 | Significant |
| **Regression Model** |
| Student Well-Being at Home =1.976+ 0.223 (air and water quality) + 0.077 (proper lighting and ventilation) + 0.146 (noise control and a peaceful environment) |
| R=0.743; R²=0.552; F=44.322; p-value=0.000 |

Presented in Table 4 is the regression analysis examining the significant influence of the domains of the Foundation of Environmental Quality, namely air and water quality, household sanitation and cleanliness, proper lighting and ventilation, and noise control and a peaceful environment, on Student Well-Being at Home in public secondary schools. The regression model reveals that three domains significantly contribute to student well-being at home, while one domain, household sanitation and cleanliness, does not show a statistically significant effect.

Among the significant predictors, air and water quality has the strongest influence on student well-being at home (B = 0.223, Beta = 0.435, t = 4.765, p = 0.000), indicating that access to clean air and water is a critical factor in ensuring students’ well-being outside of school. Noise control and a peaceful environment also exerts a significant positive effect (B = 0.146, Beta = 0.225, t = 3.831, p = 0.000), suggesting that quiet and harmonious living spaces contribute meaningfully to the emotional and mental health of students. Additionally, proper lighting and ventilation has a borderline significant influence (B = 0.077, Beta = 0.142, t = 1.770, p = 0.079), indicating a potential role in enhancing well-being, though its impact is less robust.

In contrast, household sanitation and cleanliness was found not to have a statistically significant effect (B = 0.070, Beta = 0.131, t = 1.458, p = 0.147), suggesting that while cleanliness is conceptually important, its direct contribution to well-being in this context may require further investigation or may be influenced by other mediating factors. The resulting regression equation is: Student Well-Being at Home = 1.976 + 0.223 (Air and Water Quality) + 0.077 (Proper Lighting and Ventilation) + 0.146 (Noise Control and a Peaceful Environment). The model explains 55.2% of the variance in student well-being at home (R² = 0.552), with an F-value of 44.322 and a p-value of 0.000, indicating that the overall regression model is statistically significant.

This analysis implies that improving environmental quality, particularly through ensuring clean air and water, and maintaining a peaceful, quiet atmosphere, plays a crucial role in supporting the well-being of students in their home environments. These findings highlight the importance of environmental interventions as part of a holistic approach to student development. While sanitation remains important, it may not alone significantly predict well-being, pointing to the need for more integrated strategies.

This finding aligns with the research of Andrieieva et al. (2022), who emphasized the significant influence of environmental quality domains on students’ well-being at home. Their study highlighted that access to clean air and water is foundational to maintaining both physical health and emotional stability among learners, allowing them to focus more effectively on their academic and personal responsibilities. Similarly, Ali et al. (2023) noted that noise control and a peaceful environment contribute substantially to students’ mental well-being, reducing stress and distractions and fostering a home atmosphere conducive to study and rest. Their findings support the idea that quiet and harmonious surroundings play a critical role in shaping students’ daily experiences and emotional resilience. Moreover, Montiel et al. (2020) discussed the emerging importance of proper lighting and ventilation in creating optimal learning environments at home. While their research found its impact to be less pronounced compared to other domains, they suggested that sufficient lighting and air circulation enhance comfort and focus, which can indirectly support student well-being over time.

**5. CONCLUSIONS**

Based on the findings of the study, the following conclusions were drawn:

Firstly, the level of foundation of environmental quality at home as perceived by public secondary school students is always observed. This implies that students generally live in environments conducive to health and comfort. A high-quality home environment supports students' readiness to learn and contributes positively to their day-to-day well-being.

Secondly, the level of well-being at home among public secondary school students is oftentimes observed. This implies that students feel emotionally secure, physically healthy, and academically guided in their homes. These support systems enhance their ability to manage school-related stress and maintain motivation.

Thirdly, there is a high and significant positive correlation between the foundation of environmental quality at home and students’ well-being. This implies that better home environmental conditions are closely linked with greater overall well-being among students. A supportive and healthy home environment strengthens students’ emotional stability, concentration, and academic engagement.

Finally, among the domains of environmental quality, air and water quality, noise control and peaceful environment, and proper lighting and ventilation were found to significantly influence student well-being, with air and water quality having the strongest impact. This implies that students who have access to clean air and water and live in quiet, well-lit environments are more likely to feel well and perform better academically. These physical factors play a direct and essential role in promoting comfort, focus, and mental clarity at home. However, household sanitation and cleanliness was not found to have a statistically significant effect. This implies that while students recognize cleanliness as important, its direct contribution to their well-being may be less pronounced or mediated by other conditions. Further investigation may be needed to understand how cleanliness interacts with other factors in shaping students' perceptions of well-being.

**6. RECOMMENDATIONS**

Based on the findings and conclusions of this study, the following recommendations were proposed:

Firstly, considering the very high level of foundation of environmental quality at home as reported by public secondary school students, it is recommended that parents and guardians maintain and improve environmental conditions such as air and water quality, noise control, and overall cleanliness. Schools, in collaboration with local government units, may initiate awareness campaigns and parent seminars on creating a healthy and peaceful home environment. Community leaders may also support efforts to ensure clean public utilities and promote eco-friendly practices in residential areas.

Secondly, given the high level of well-being at home among students, schools and families may continue providing emotional, nutritional, and academic support. School counselors and teachers can develop family engagement programs to help parents understand the value of emotional connection, balanced nutrition, and study support. Parents are encouraged to maintain open communication, ensure healthy routines, and guide their children’s academic activities.

Thirdly, since a significant and high correlation was found between the foundation of environmental quality and student well-being at home, schools and stakeholders may recognize the crucial role of home environments in supporting student outcomes. This may include home visit programs, coordination with health offices, and integrating home wellness education into school curricula. Encouraging families to make small but consistent improvements in household conditions can greatly impact students' overall development.

Finally, as air and water quality and noise control and a peaceful environment significantly influence student well-being, these aspects may be prioritized in community development and family health policies. Proper lighting and ventilation may also be considered, though their influence was marginally significant. On the other hand, since household sanitation and cleanliness was not found to have a significant effect in this study, future initiatives may investigate whether other variables mediate this relationship. Further research is also encouraged to explore additional factors, such as digital access, parenting styles, or economic status, that may affect student well-being at home.

Ethical approval and Consent

This study was conducted with strict adherence to ethical principles to safeguard the rights, privacy, and well-being of all participants. Prior to data collection, the researcher secured the necessary approvals, including an endorsement from the Dean of the Graduate School and ethical clearance from the appropriate institutional review board. The ethical process was guided by the framework proposed by Pregoner et al. (2025), aligning with contemporary standards for conducting research involving human subjects in educational settings. Participation in the study was completely voluntary, with respondents thoroughly informed about the study’s purpose, procedures, and their right to decline or withdraw at any point without penalty. Informed consent was obtained from each participant, ensuring they fully understood and agreed to take part in the research. Confidentiality and anonymity were strictly upheld, with no personal identifiers collected or disclosed during the data gathering or reporting phases. All collected data were used solely for academic purposes and managed with the utmost respect for participant privacy. This ethical approach ensured that the study was conducted with integrity, transparency, and full accountability.

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1.

2.

3.

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