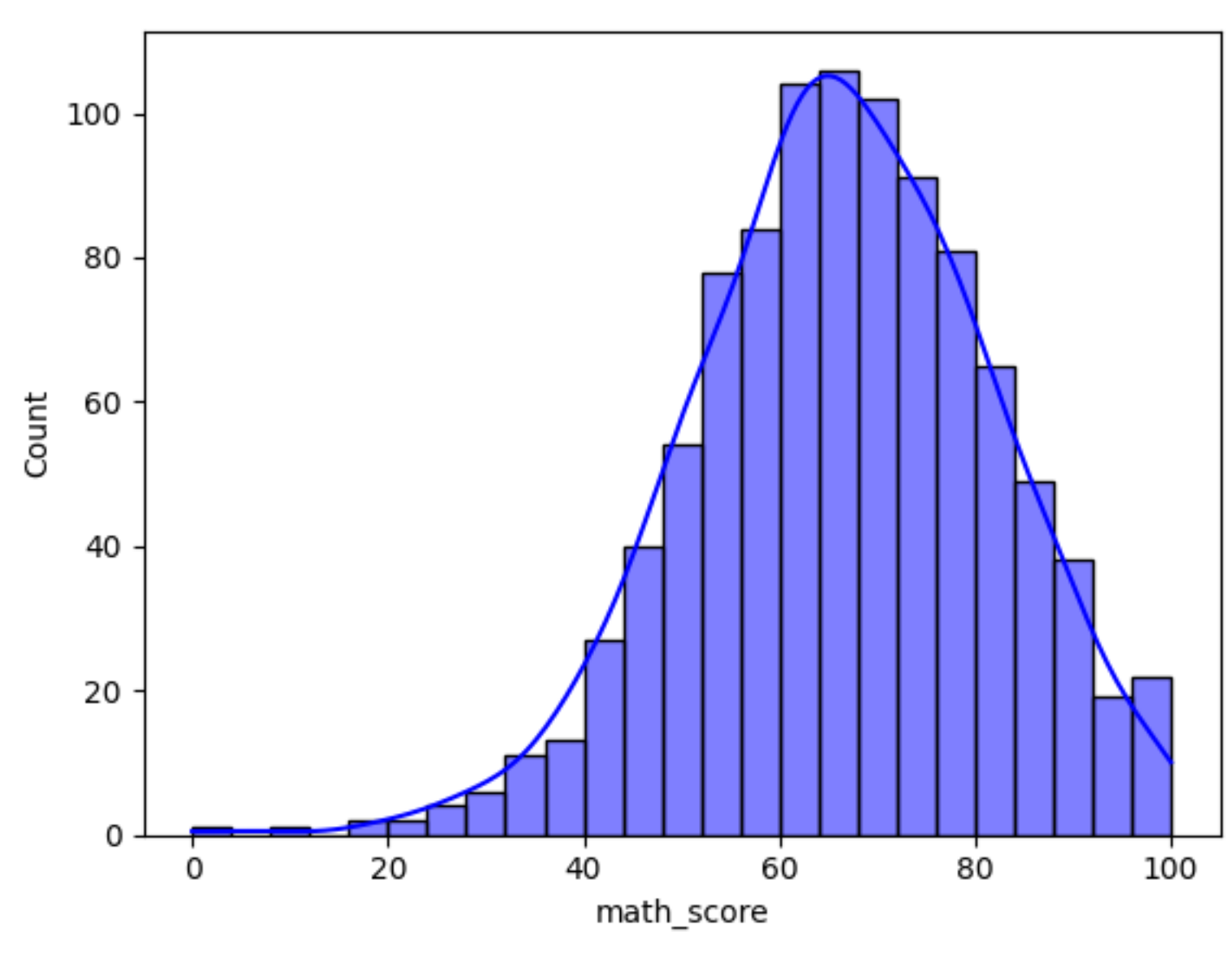
In [14]:
```python
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

In [26]:
```python
df = pd.read_csv('student (1).csv')
df.head()
```

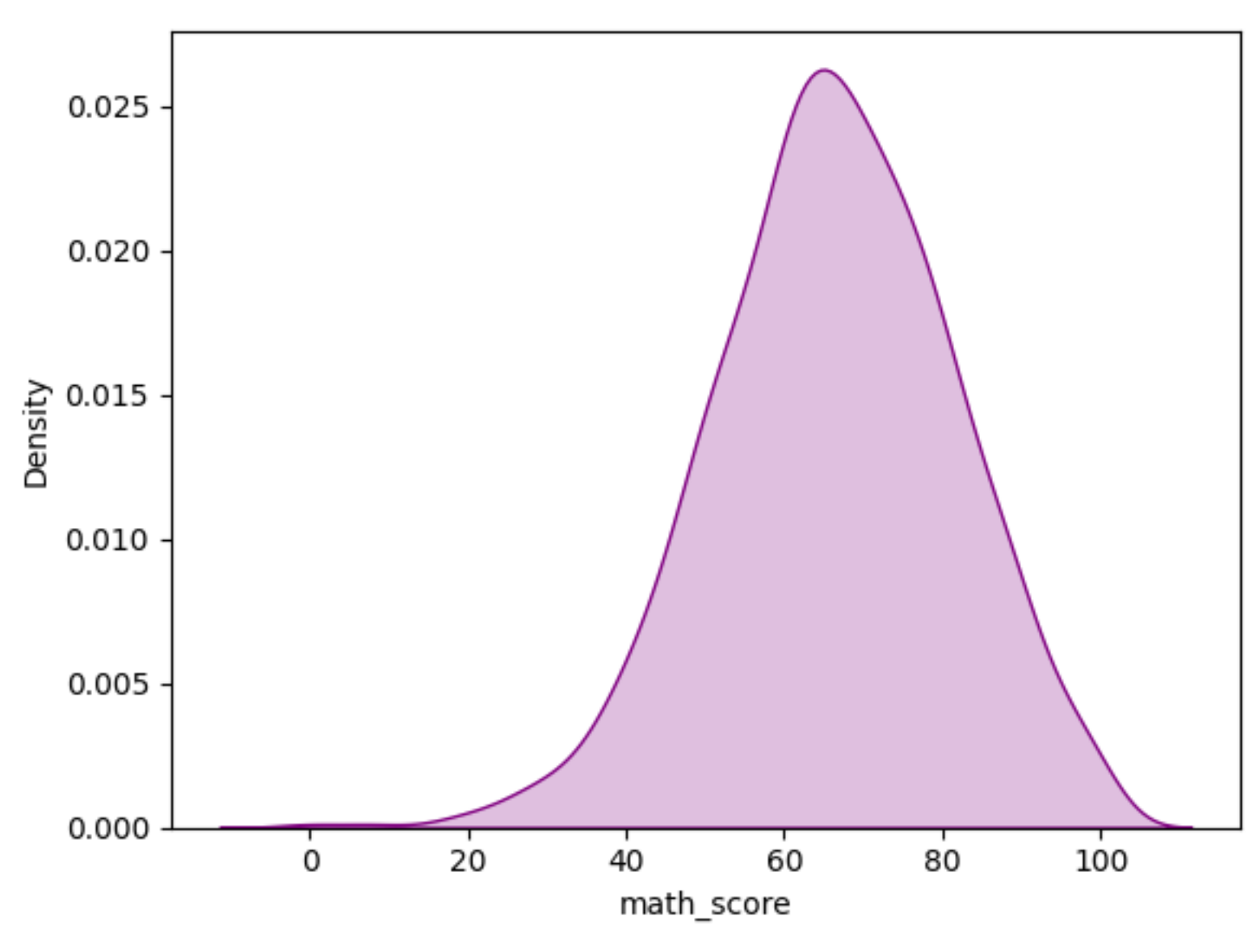
Out[26]:

	gender	ethnicity	parental_education	lunch	test_preparation_course	math_score	reading_score	writing_score
0	female	group B	bachelor's degree	standard	none	72	72	74
1	female	group C	some college	standard	completed	69	90	88
2	female	group B	master's degree	standard	none	90	95	93
3	male	group A	associate's degree	free/reduced	none	47	57	44
4	male	group C	some college	standard	none	76	78	75

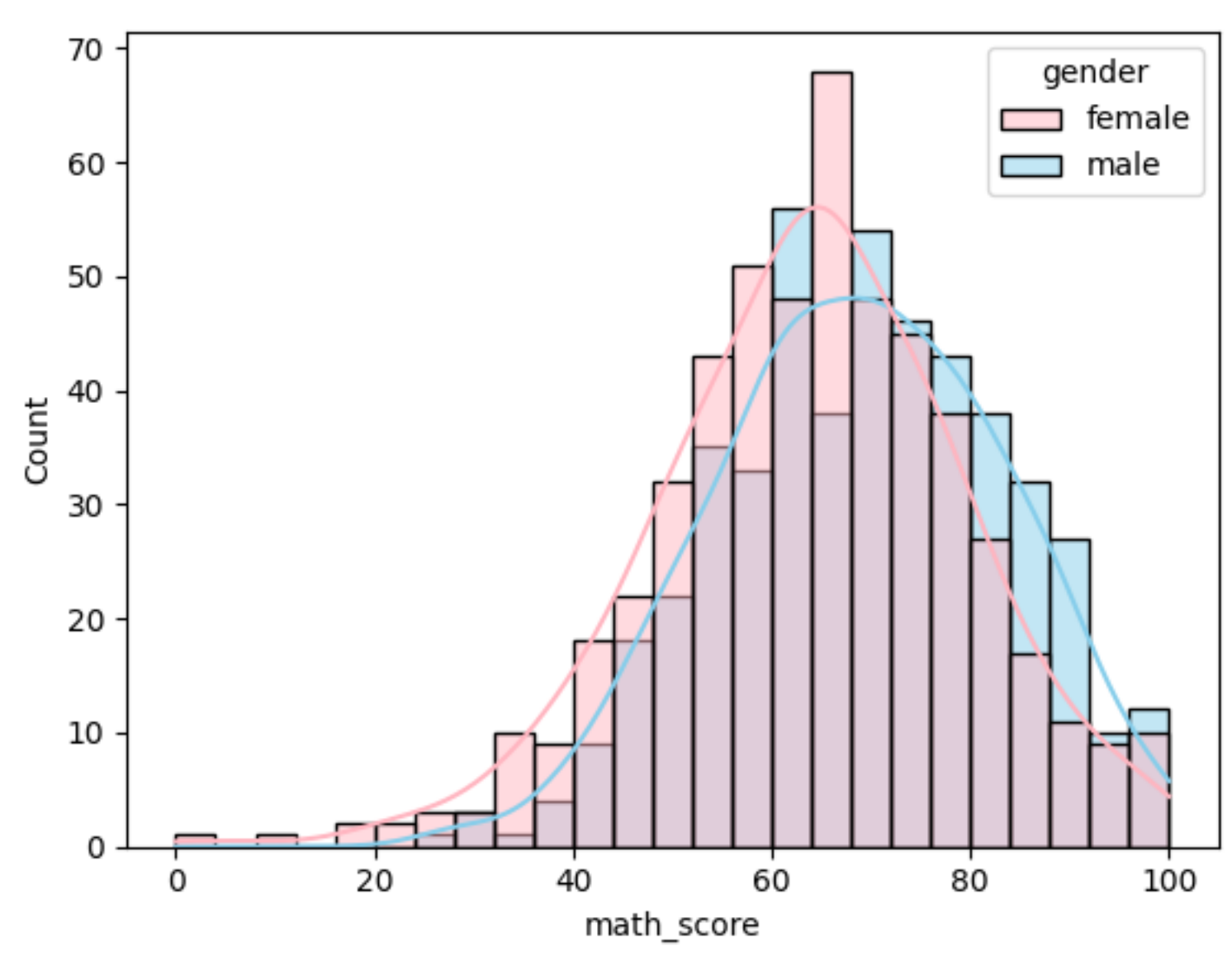
In [29]:
```python
# create a histogram for math_score
# kde: kernel density estimate (smoother version of histplot)
sns.histplot(data=df, x='math_score', color='blue', kde=True)
plt.show()
```



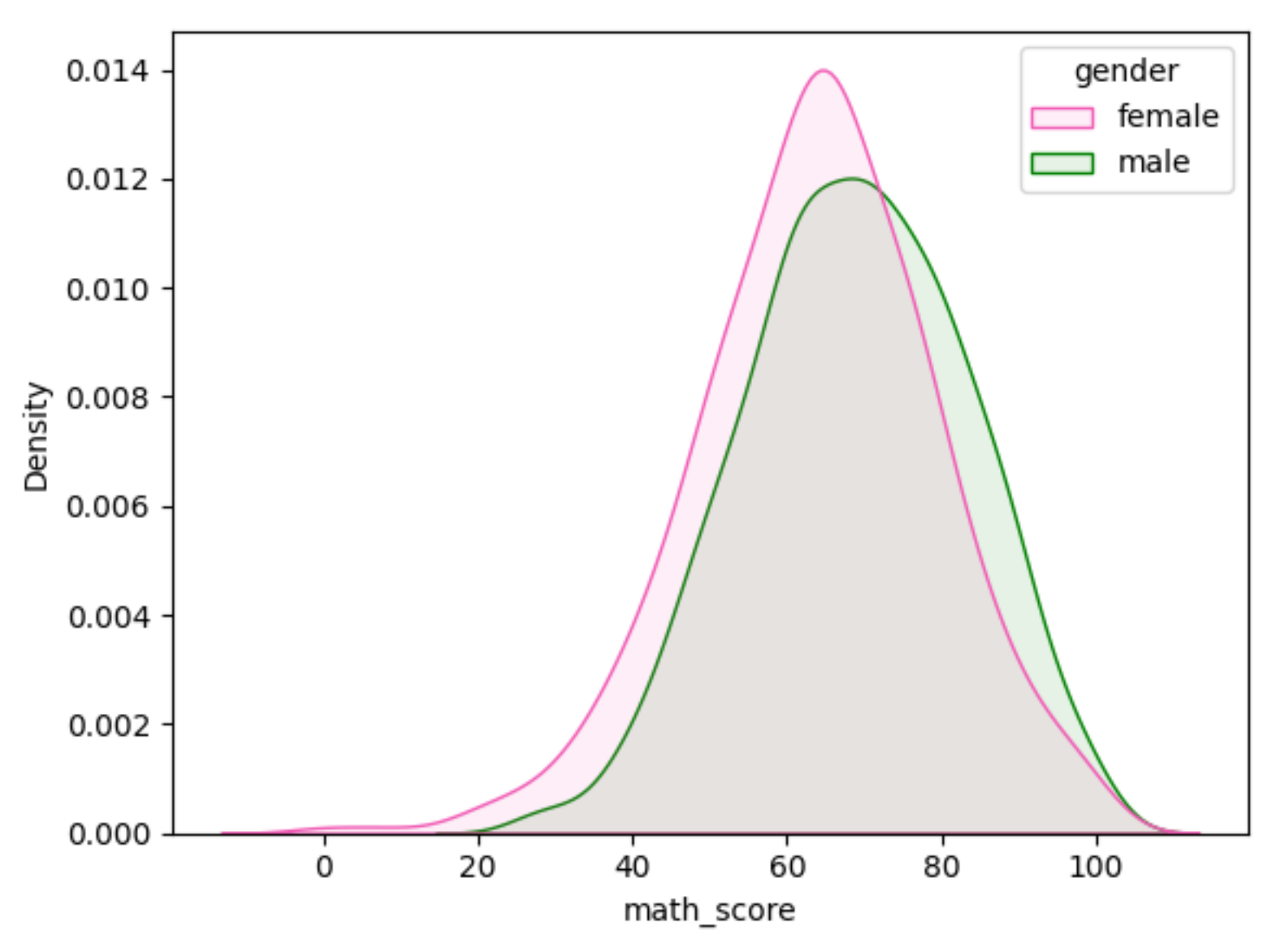
In [32]:
```python
# What if I only need the curved line to display the distribution of math
sns.kdeplot(data=df, x='math_score', fill=True, color='purple')
plt.show()
```



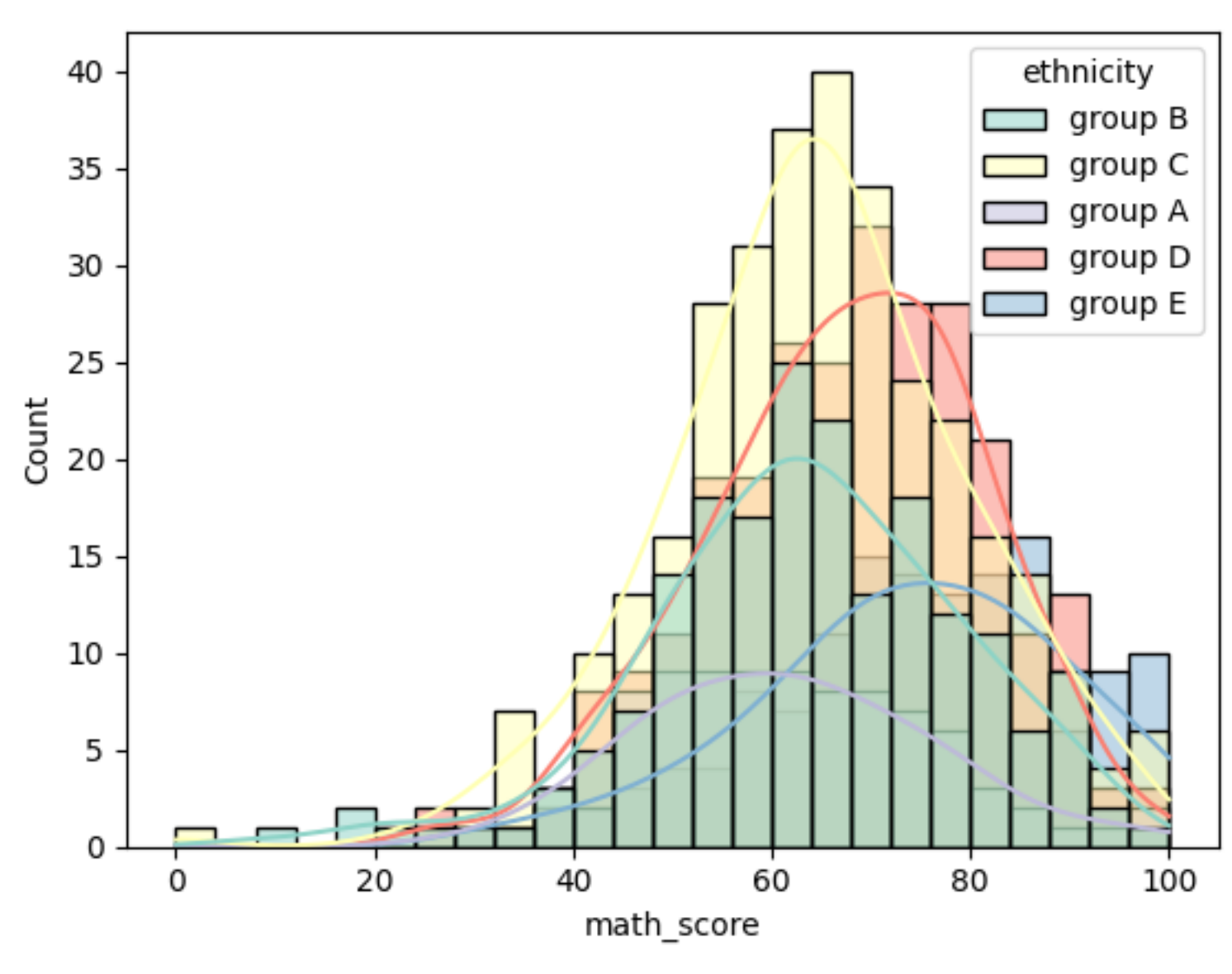
In [37]:
```python
# How to visualize the math_score distribution across gender?
sns.histplot(data=df, x='math_score', hue='gender',
             palette={'female':'lightpink', 'male':'skyblue'}, kde=True)
plt.show()
```



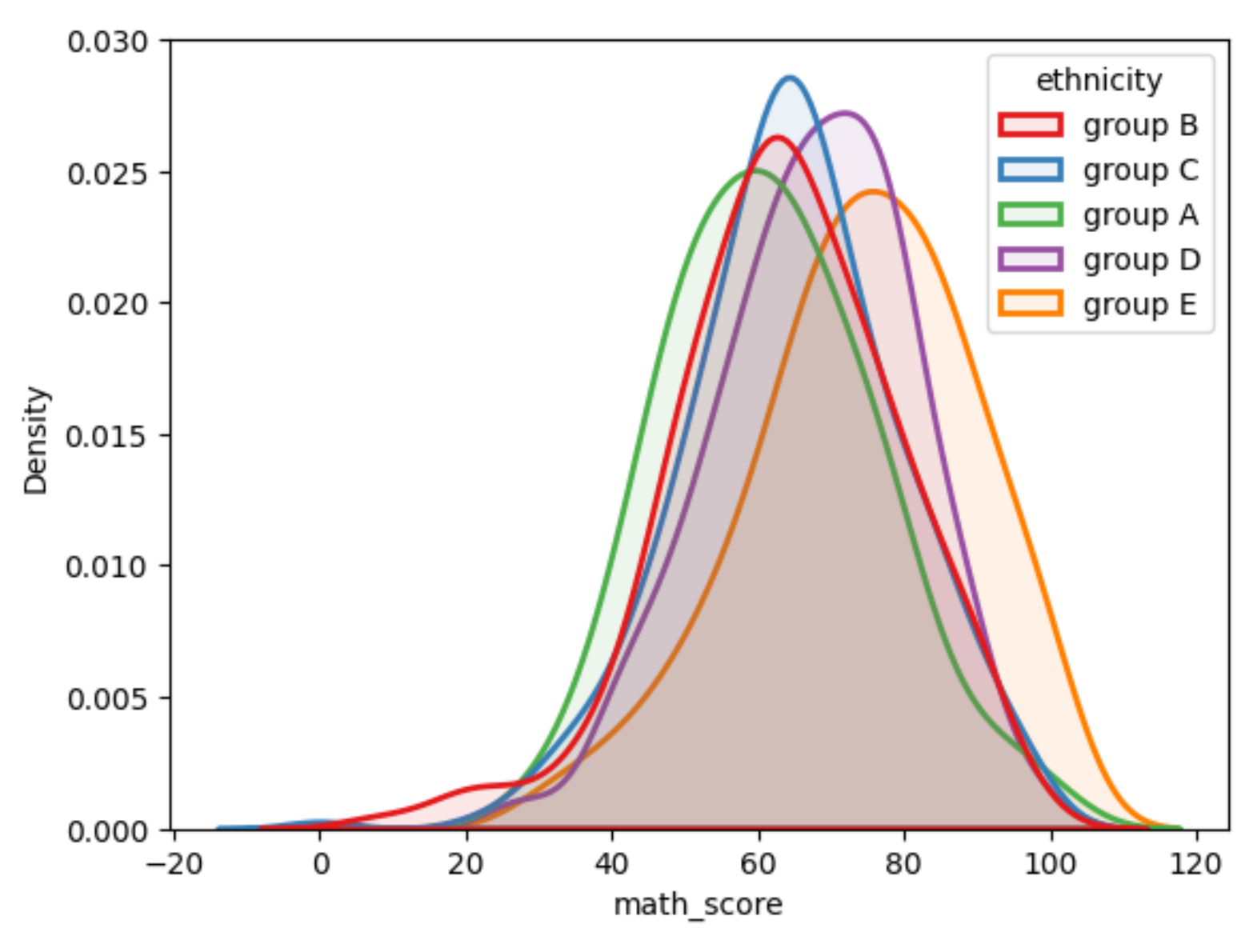
In [42]:
```python
# How to visualize the math_score distribution across gender?
# use kdeplot()
sns.kdeplot(data=df, x='math_score', hue='gender',
            palette={'female':'#f15bb5', 'male':'green'}, fill=True,
            alpha=0.1)
plt.show()
```



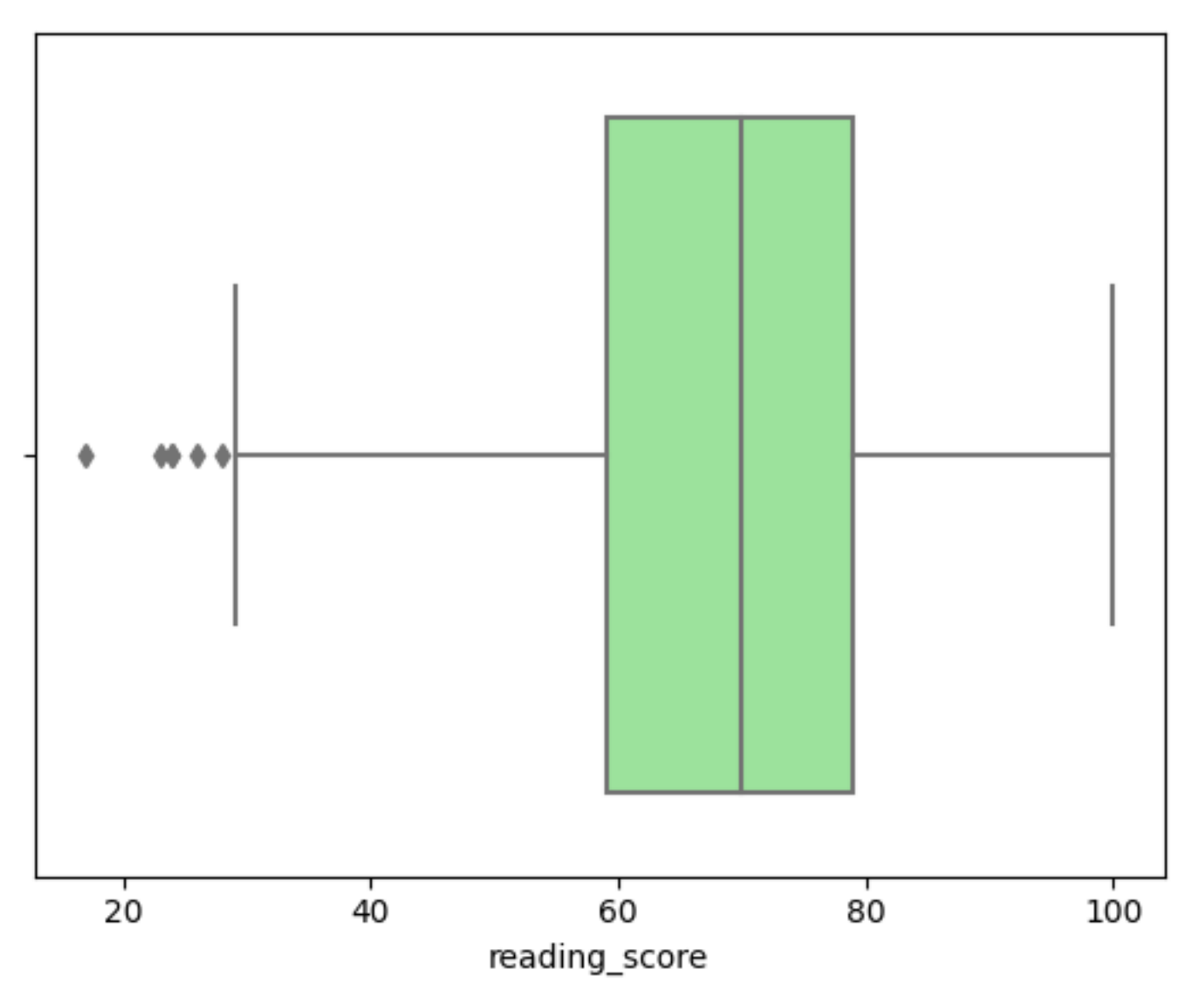
In [47]:
```python
# How to visualize the math_score distribution across ethinicity?
# histplot()
sns.histplot(data=df, x='math_score', hue='ethnicity', kde=True,
             palette='Set3')
plt.show()
```



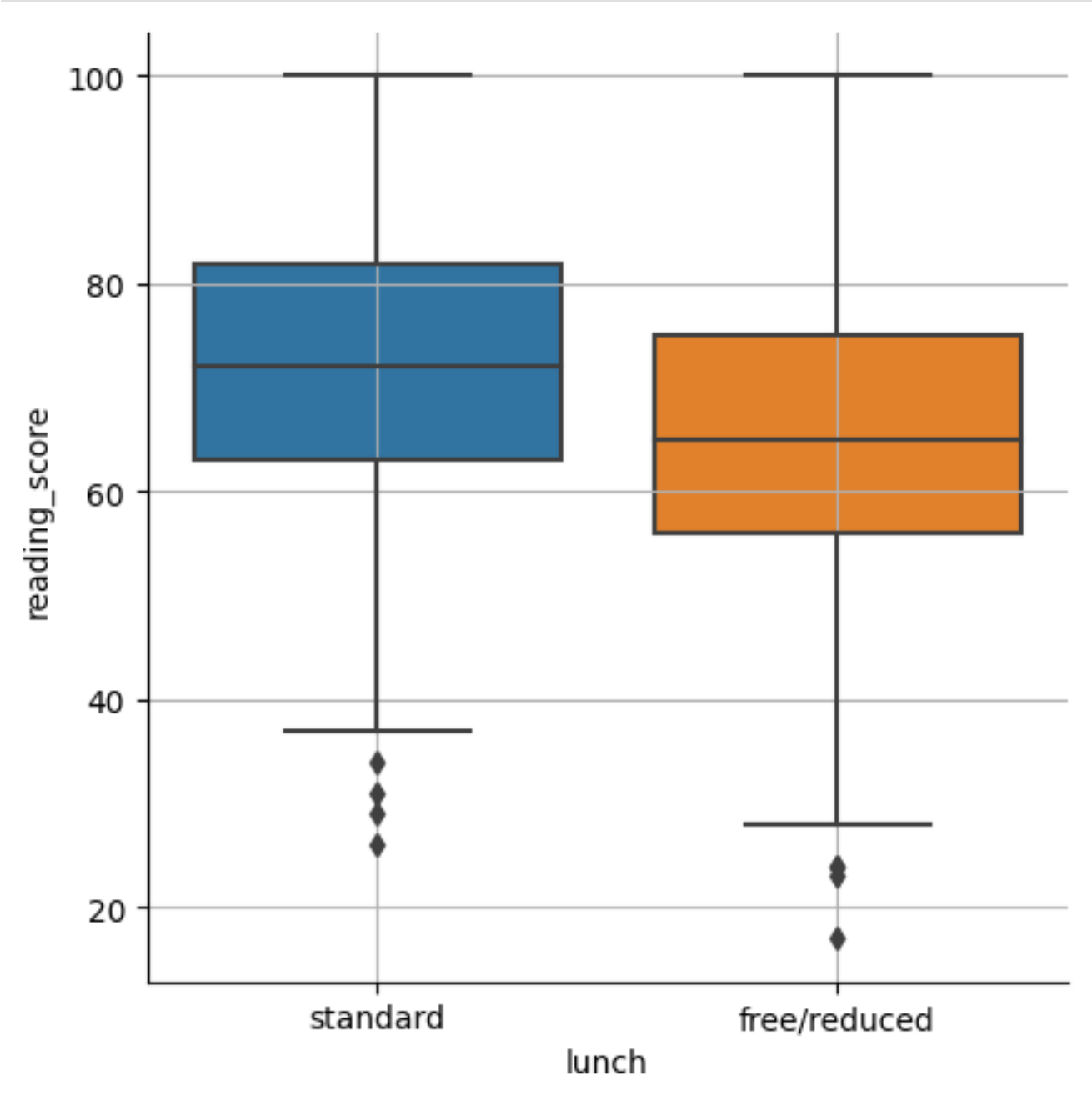
In [55]:
```python
# How to visualize the math_score distribution across ethinicity?
# kdeplot()
# common_norm=False: create curve based on ethnicity individually
sns.kdeplot(data=df, x='math_score', hue='ethnicity',
            palette='Set1', common_norm=False, fill=True, alpha=0.1,
           linewidth=2)
plt.show()
```



In [57]:
```python
# How to create a boxplot for reading_score?
sns.boxplot(data=df, x='reading_score', color='lightgreen')
plt.show()
```

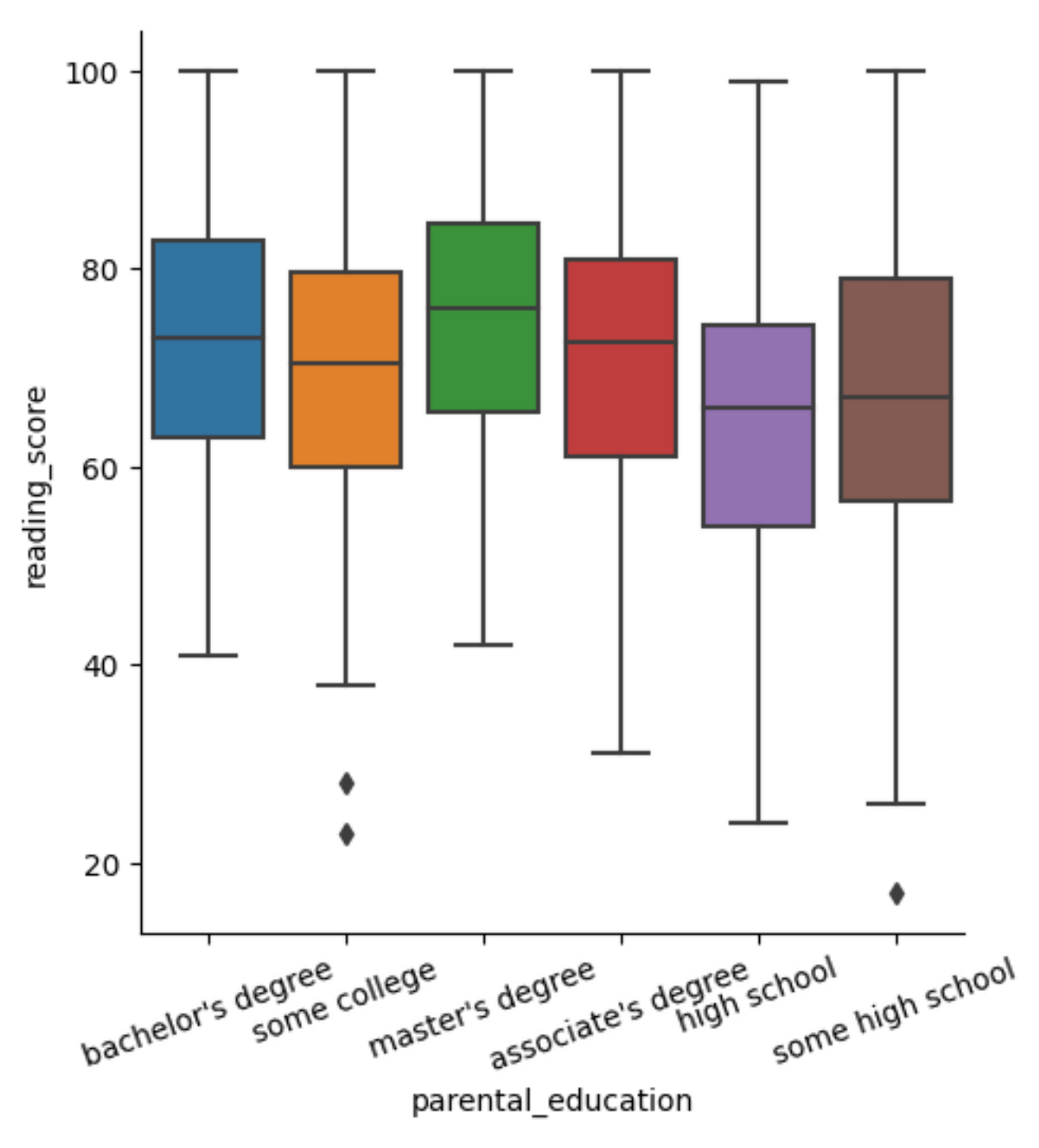


In [59]:
```python
# grouped box plot
# visualize the reading_score across lunch by using boxplot
sns.catplot(data=df, x='lunch', y='reading_score', kind='box')
plt.grid(True)
plt.show()
```

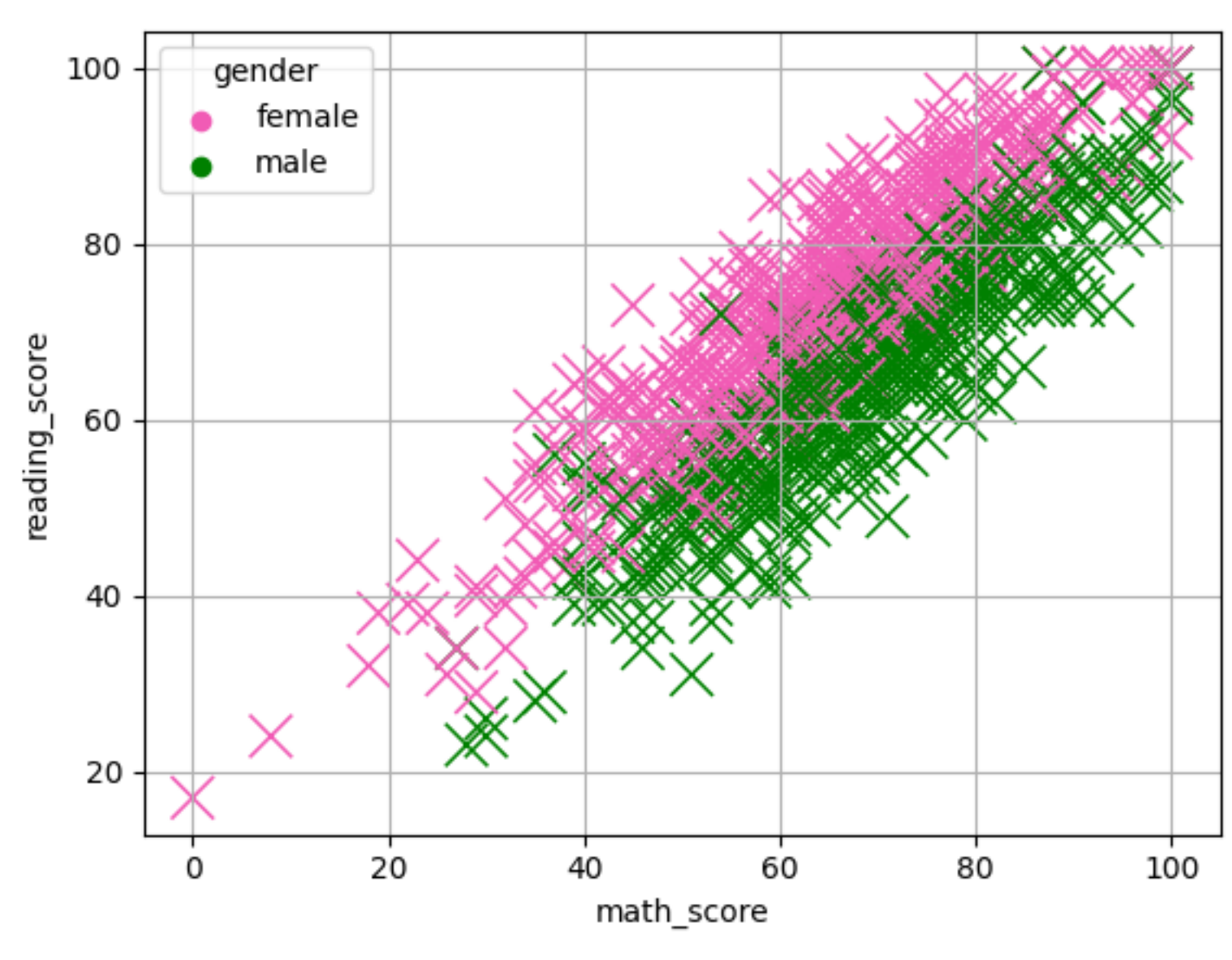


In [62]:
```python
sns.dogplot()
```

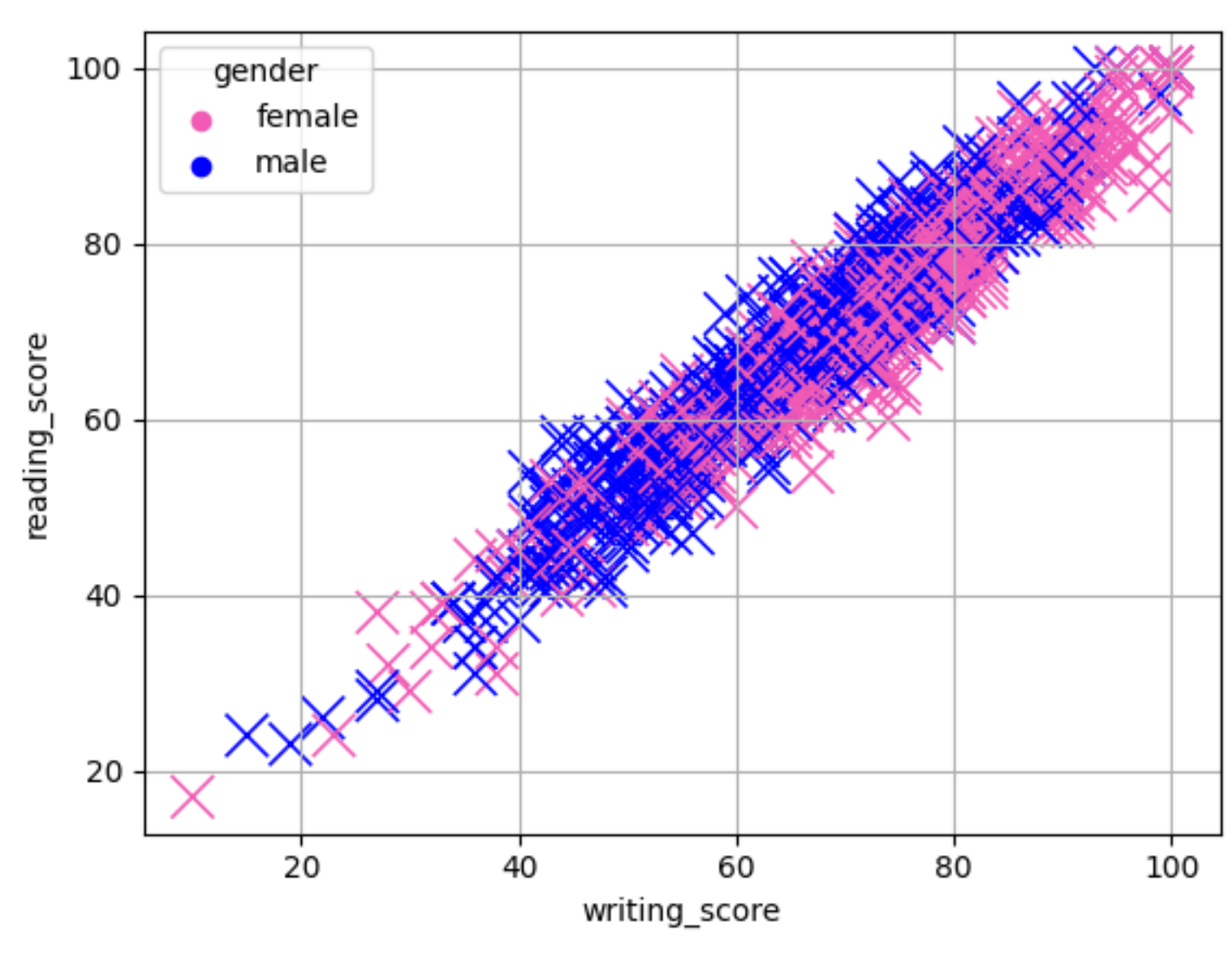
In [66]:
```python
# visualize the reading_score across parental_education, using boxplot()
sns.catplot(data=df, x='parental_education', y='reading_score', kind='box')
plt.xticks(rotation=20)
plt.show()
```



In [81]:
```python
# To find the relationship between two numeric variables, you
# can use scatter plot
# try math_score and reading_score
sns.scatterplot(data=df, x='math_score', y='reading_score', hue='gender',
                marker='x', s=200, palette={'female':'#f15bb5', 'male':'green'})
plt.grid(True)
plt.show()
```



In [83]:
```python
sns.scatterplot(data=df, x='writing_score', y='reading_score', hue='gender',
                marker='x', s=200, palette={'female':'#f15bb5', 'male':'blue'})
plt.grid(True)
plt.show()
```



In [ ]: