In [2]:
```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

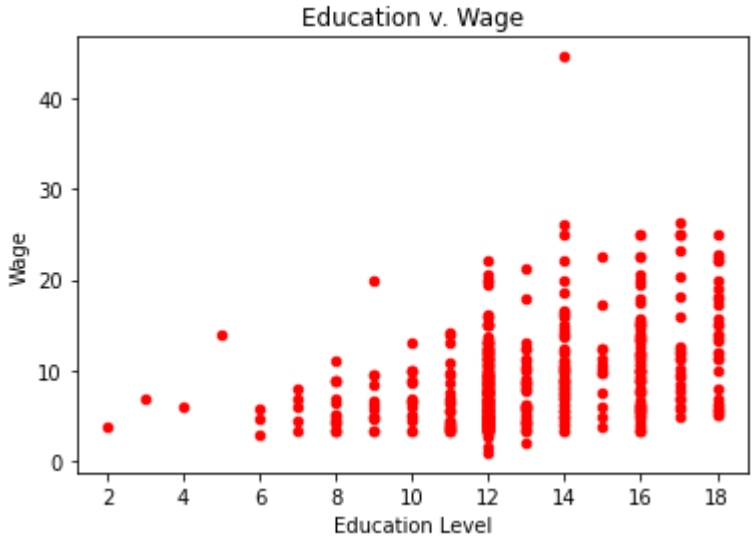
In [3]:
```
mdff = pd.read_csv("datasets/wageGenderEduAge.csv")
display(mdff)
```

	wage	education	age	gender
0	5.10	8	35	female
1	4.95	9	57	female
2	5.71	12	34	female
3	3.35	12	26	female
4	4.00	12	64	female
...	...	...	...	...
529	12.50	15	31	male
530	16.00	12	30	male
531	11.36	18	29	male
532	19.88	12	31	male
533	15.38	16	55	male

534 rows × 4 columns

In [16]:
```
mdff.plot(x='education', y='wage', kind='scatter', color='r')
plt.title("Education v. Wage")
plt.xlabel("Education Level")
plt.ylabel("Wage")
```

Out[16]:
```
Text(0, 0.5, 'Wage')
```



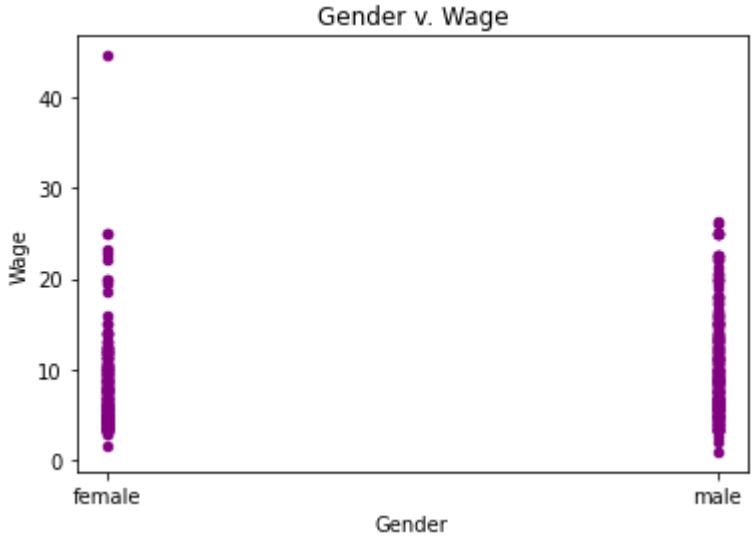
The graph shows a trend of higher wages as the education level increases. Let's look at the other independent variables and their trends with wages.

In [5]:
```
mdff.plot(x='age', y='wage', kind='scatter', color='b')
plt.title("Age v. Wage")
plt.xlabel("Age")
plt.ylabel("Wage")
```

Out[5]: Text(0, 0.5, 'Wage')

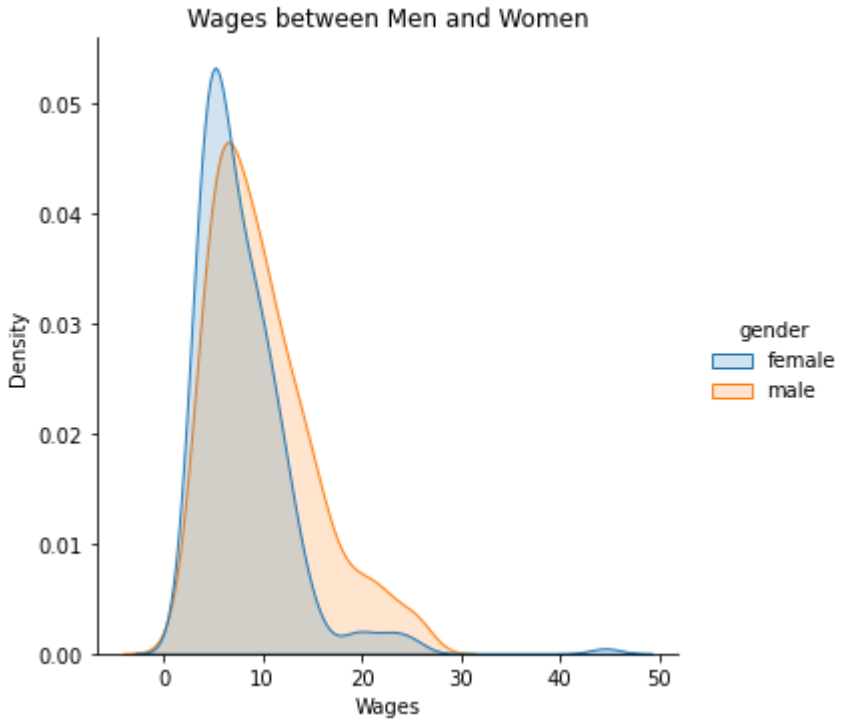
In [6]:
```
mdff.plot(x='gender', y='wage', kind='scatter', color='purple')
plt.title("Gender v. Wage")
plt.xlabel("Gender")
plt.ylabel("Wage")
```

Out[6]: Text(0, 0.5, 'Wage')



In [20]:
```
sns.displot(mdff, x="wage", hue="gender", kind="kde", fill=True, alpha=0.2)
plt.title("Wages between Men and Women")
plt.xlabel("Wages")
```

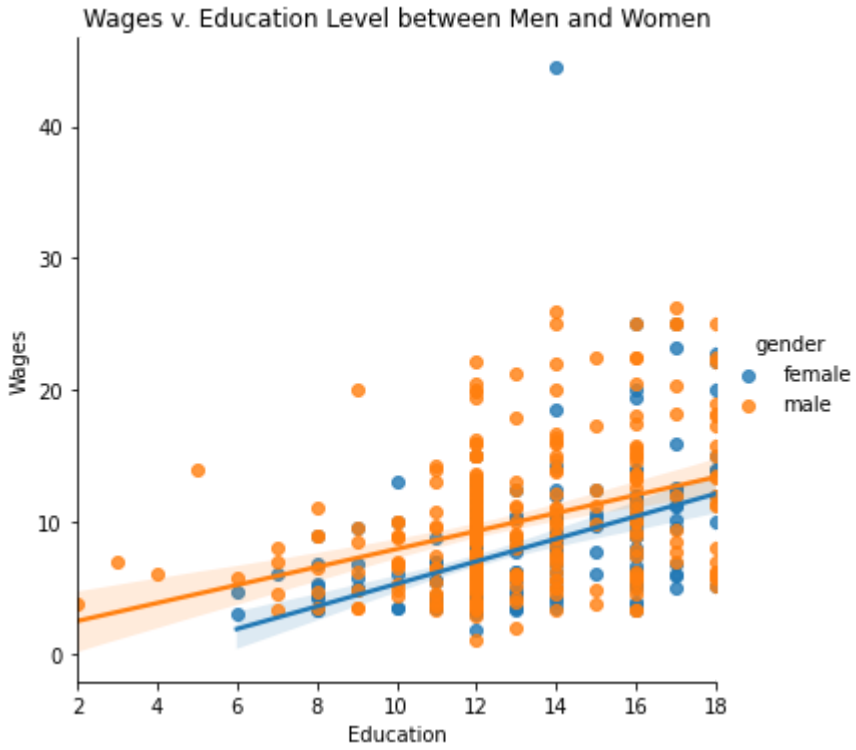
Out[20]: Text(0.5, 6.79999999999999, 'Wages')



Based on the graph, the relationship between gender and wages show that more males earn higher wages than females. We can observe this one the graph where the male distribution of wages is wider as wages increase. Let's look at how our other factors effect men and women and their respective wages.

In [26]:
```
sns.lmplot(x='education', y='wage', data=mdff, hue='gender')
plt.title("Wages v. Education Level between Men and Women")
plt.ylabel("Wages")
plt.xlabel("Education")
```

Out[26]:
```
Text(0.5, 6.79999999999999, 'Education')
```



In conclusion, males get paid more than females at the same eduation level. As the education level increases, the gap between wages for males and females decreases but wages for males is always higher. The slope of the wage line is steeper for women but men's wages start at a higher base level.

In [23]:
```
sns.lmplot(x='age', y='wage', data=mdff, hue='gender')
plt.title("Wages v. Age Level between Men and Women")
plt.ylabel("Wages")
plt.xlabel("Age")
```

Out[23]:
```
Text(0.5, 6.79999999999999, 'Age')
```

The graph illustrates that as age increases, women's wages increase at a much slower rate than men. One again, males at all ages earn higher wages than females.

In [ ]:
```
```