**Lesson Plan**

**Author / Teacher:** *Robert Porzak*

**Course / Subject:** *Statistics*

**Level** (ISCED, difficulty)**:** *ISCED: 6, medium*

**Theme:** *Statistical Test Selection – comparing groups (part 1)*

**Prerequisite skills or knowledge** (connect to prior lesson): *student should have had at least one basic methodology of quantitative social research and statistics courses, ensuring understanding of basic terms and concept of statistics.*

**Time required for pre-class activity:** *1h*

**Time required for in-class activity:** *2h*

**Time required for post-class activity:** *1h*

Story, canvas, challenges for student (optional, motivational):

*Data collected from students can let us understand relation between sex, education level, age, religiosity, intelligence, school grades and sexual permissiveness, marijuana use, transgender and cancel culture attitudes. How to learn, what are conclusions? How to select the right statistical test to verify results?*

1. **Student’s new material (before class)**

Please see:

General intro:

<https://towardsdatascience.com/statistical-testing-understanding-how-to-select-the-best-test-for-your-data-52141c305168>

Bivariate Analysis & Comparing Groups:

<https://www.youtube.com/watch?v=gX6DpTrkoKA>

Test selector:

<https://methods.sagepub.com/which-stats-test>

1. **In-class activities**
2. Discussion, if attitudes toward sex really differ between women and men and how to prove it.
3. Presentation of IDEAL Games.
4. Group play: Statistical Match 2 <https://idealgames.eduproject.eu/user/game/77>
5. Discussion game results, playing in forum.
6. Homework:
   1. play one time each of Statistical Match 1 – 7;
   2. answer how to verify one of randomly assigned questions.
7. **Post-class activities**

Doing homework, recording collected sum of points and proposed test.

1. **Evaluation and Assessment**

Feedback on results, grades for answers.

**Lesson Plan**

**Author / Teacher:** *Robert Porzak*

**Course / Subject:** *Statistics*

**Level** (ISCED, difficulty)**:** *ISCED: 6, medium*

**Theme:** *Statistical Test Selection – comparing groups (part 2)*

**Prerequisite skills or knowledge** (connect to prior lesson): *student should have had at least one basic methodology of quantitative social research and statistics courses, ensuring understanding of basic terms and concept of statistics.*

**Time required for pre-class activity:** *1h*

**Time required for in-class activity:** *2h*

**Time required for post-class activity:** *1h*

Story, canvas, challenges for student (optional, motivational):

*Data collected from students can let us understand relation between sex, education level, age, religiosity, intelligence, school grades and sexual permissiveness, marijuana use, transgender and cancel culture attitudes. How to learn, what are conclusions? How to select the right statistical test to verify results?*

1. **Student’s new material (before class)**

Please see:

General intro:

<https://towardsdatascience.com/statistical-testing-understanding-how-to-select-the-best-test-for-your-data-52141c305168>

Multiple Groups Comparison:

<https://www.youtube.com/watch?v=dYdTqoamI3Q>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7720730/>

Test selector:

<https://methods.sagepub.com/which-stats-test>

1. **In-class activities**
2. Discussion, if attitudes toward marijuana use really differ between persons with different education level and how to prove it.
3. Group play: Statistical Match 9 <https://idealgames.eduproject.eu/user/game/84>
4. Discussion game results, playing in forum.
5. Homework:
   1. play one time each of Statistical Match 8 – 16;
   2. answer how to verify one of randomly assigned questions.
6. **Post-class activities**

Doing homework, recording collected sum of points and proposed test.

1. **Evaluation and Assessment**

Feedback on results, grades for answers.

**Lesson Plan**

**Author / Teacher:** *Robert Porzak*

**Course / Subject:** *Statistics*

**Level** (ISCED, difficulty)**:** *ISCED: 6, medium*

**Theme:** *Statistical Test Selection – correlations*

**Prerequisite skills or knowledge** (connect to prior lesson): *student should have had at least one basic methodology of quantitative social research and statistics courses, ensuring understanding of basic terms and concept of statistics.*

**Time required for pre-class activity:** *1h*

**Time required for in-class activity:** *2h*

**Time required for post-class activity:** *1h*

Story, canvas, challenges for student (optional, motivational):

*Data collected from students can let us understand relation between sex, education level, age, religiosity, intelligence, school grades and sexual permissiveness, marijuana use, transgender and cancel culture attitudes. How to learn, what are conclusions? How to select the right statistical test to verify results?*

1. **Student’s new material (before class)**

Please see:

General intro:

<https://towardsdatascience.com/statistical-testing-understanding-how-to-select-the-best-test-for-your-data-52141c305168>

Correlations:

<https://www.statisticshowto.com/probability-and-statistics/correlation-coefficient-formula/>

Test selector:

<https://methods.sagepub.com/which-stats-test>

1. **In-class activities**
2. Discussion, if sexual permissiveness is really correlated with school grades and how to prove it.
3. Group play: Statistical Match 18 <https://idealgames.eduproject.eu/user/game/93>
4. Discussion game results, playing in forum.
5. Homework:
   1. play one time each of Statistical Match 17 – 20;
   2. answer how to verify one of randomly assigned questions.
6. **Post-class activities**

Doing homework, recording collected sum of points and proposed test.

1. **Evaluation and Assessment**

Feedback on results, grades for answers.

**Lesson Plan**

**Author / Teacher:** *Robert Porzak*

**Course / Subject:** *Statistics*

**Level** (ISCED, difficulty)**:** *ISCED: 6, medium*

**Theme:** *Statistical Test Selection – regressions*

**Prerequisite skills or knowledge** (connect to prior lesson): *student should have had at least one basic methodology of quantitative social research and statistics courses, ensuring understanding of basic terms and concept of statistics.*

**Time required for pre-class activity:** *1h*

**Time required for in-class activity:** *2h*

**Time required for post-class activity:** *1h*

Story, canvas, challenges for student (optional, motivational):

*Data collected from students can let us understand relation between sex, education level, age, religiosity, intelligence, school grades and sexual permissiveness, marijuana use, transgender and cancel culture attitudes. How to learn, what are conclusions? How to select the right statistical test to verify results?*

1. **Student’s new material (before class)**

Please see:

General intro:

<https://towardsdatascience.com/statistical-testing-understanding-how-to-select-the-best-test-for-your-data-52141c305168>

Regressions:

<https://www.youtube.com/watch?v=xTpHD5WLuoA>

Test selector:

<https://methods.sagepub.com/which-stats-test>

1. **In-class activities**
2. Discussion, if marijuana use attitudes depends on age, intelligence, and cancel culture attitudes and how to prove it.
3. Group play: Statistical Match 22 <https://idealgames.eduproject.eu/user/game/93>
4. Discussion game results, playing in forum.
5. Homework:
   1. play one time each of Statistical Match 21 – 25;
   2. answer how to verify one of randomly assigned questions.
6. **Post-class activities**

Doing homework, recording collected sum of points and proposed test.

1. **Evaluation and Assessment**

Feedback on results, grades for answers.