Cluster Analysis of Learners Based on Their Perception of Writing Aids

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Background & Purpose

- **Academic writing class**
  - for 1st year students
  - Flipped Classroom
  - based on: textbook, e-learning, and writing aids

-relevant researches are:
  - tools for writing outline (Tominaga et al., 2015)
  - detailed outline (Fujita et al., 2015)

Any individual differences among learners on perception of usefulness of writing aids?

Method

- **Subjects**
  - 198 1st year students

- **Procedure**
  1) Students used writing aids
  2) Submitted report concerning on science and technology (1500-2000 words)
  1) Questionnaire survey
     - student’s perception of usefulness on writing aids

Results and Discussion

- **Factor analysis for usefulness**
  - principal factor analysis based on Promax rotation
  - factor contribution ratio before rotation: 52.51%
  - Fac.1: Support tools for writing process
  - Fac.2: Feedback

<table>
<thead>
<tr>
<th></th>
<th>Fac.1 Support tools</th>
<th>Fac.2 Feedback</th>
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<tbody>
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</tbody>
</table>

- **Scatterplot based on factor score**
  - Found 4 groups.

  ![Scatterplot](image)

  y-axis: Feedback

  x-axis: Support tools

- **One-way anova to each group based on factor score**
  - Found main effects
    - Support tools: F(3,194)=46.96, p<.001
    - Feedback: F(3,194)=25.56, p<.001
  - result of multiple comparison with Tukey method showed on following fig.
  - Learners clearly distinguished among their perception of writing aids
  - learners can/can’t use support tools and feedback

- **Thesis Statement**
  - topic sentence(1)
  - supporting sentences(1)
  - topic sentence(2)
  - supporting sentences(2)

  ![Thesis Statement](image)