Correlation of English Competency with ICD-10 Coding Competence at Apikes Iris Students

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Abstract : Clinical Classification and English are two mutually supportive courses for health students, especially medical recorders and health information. However, English Communicative competence has not been fully a priority for students in the Department of Medical Recorder and Health Information of Apikes Iris, this is because students have not realized the importance of English competence in the medical record field, because English is the language used by WHO in ICD-10, Research This study aims to determine the Correlation of English Competence with ICD-10 Coding Competence in Apikes Iris Students. This study uses a combination method between two approaches, namely qualitative and quantitative, qualitative data obtained from the observation of the value of English language lectures in semester II and KK IV scores in the second semester. fourth semester. It can be concluded that the English language ability variable (X) and the coding ability variable (Y) have a significant relationship with each other for the assessment of the Mean, Median and Mode in the English course, it is known that from a total of 57 students or respondents, a Mean value of 76.45 was obtained; Median 76.00 and Mode 81.00.. Based on the results of the questionnaire related to the Importance of Clinical Classification Courses in Speed and Accuracy of Coding, 100% of respondents answered agree that the Clinical Classification course is very important for the speed and accuracy of coding.

IndexTerms **- Clinical Classification, Competence, Coding, English**

INTRODUCTION

The Clinical Classification course is a mandatory course in the medical record and health information department of Apikes Iris, the Clinical Classification course is required every semester starting from semester I to semester VI, so that medical record graduates will later become an expert in the field of coding. Coding using ICD -10 is a must-have book for students, ICD or (International Statistical Classification of Diseases and Related Health Problems), is a book published by WHO (World Health Organization) that uses English as an introduction. According to Permenkes 377 concerning Professional Standards for Medical Recorders and Health Informatics, it describes the competence for medical recorders to be able to set codes and actions appropriately according to the classification applied in Indonesia (ICD-10) regarding diseases and medical actions in health services and management.

In addition, English courses are also given as a general course at Apikes Iris which is required in semester I and semester II, English is one of the important aspects that must be possessed by students. Because, English is an international language that can support the communication and expertise of a medical recorder. English is the most widely spoken language in the world. English is the mother tongue of more than 400 million people worldwide.

In the new era known as the industrial revolution 4.0 or also known as the digital era 4.0, there are many local hospitals that have international standards and are internationally accredited. However, the ability of English as an international language, both spoken and written, of D3 Medical Recorders and Health Information Apikes Iris students in general has not been prioritized. For example, health students, in this case medical record students, have limited English skills. The learning system at the tertiary level still refers to the classical learning system, this is due to the students' basic English language skills which are still very minimal, this can be seen from the students' abilities and vocabulary are very limited. Like the author's own experience who has been teaching English for approximately 8 years at Apikes Iris.

The learning method that is still used today at Apikes Iris is the Teacher Learning Center where the lecturer is still the center of learning. As the writer's experience, students tend to be passive and students listen more and rarely respond to questions posed by the lecturer.

The description above is the reason why the author is interested in researching the Correlation of English Competence with ICD-10 Coding Competence in Apikes Iris Students. Do communicative skills and English grades show a significant correlation with the ability to use ICD-10 in the Clinical Classification course?

The following is a roadmap on the research that will be carried out by researchers:
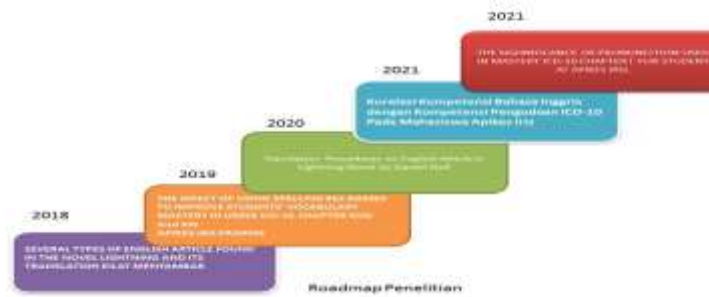

Figure.1 Research Roadmap

In the research roadmap above, the researcher in 2021 will examine the correlation of English competence with ICD-10 coding competence in Apikes Iris students and in the following year the researcher plans to still research in the field of Clinical Classification and be associated with English pronunciation on ICD-10.

I. RESEARCH METHODOLOGY

This study uses a combination of two approaches, namely qualitative and quantitative, qualitative data obtained from the observation of the value of the second semester of English class II and the value of Clinical Classification (KK) IV in the fourth semester.

The method used in this study is correlation analysis, with secondary data collection techniques and filling out questionnaires. Secondary data collection is in the form of student score data for English and Clinical Classification courses. Primary data collection is in the form of filling out a questionnaire in a google form that is given to all respondents.

The correlation analysis research method was chosen because it will study the relationship between two or more variables, namely: the relationship between variations in one variable and variations in other variations (Zaenal Arifin, 2011:48). In this case, it will look at the proficiency level of English language competence and Clinical Classification.

II. RESULTS AND DISCUSSION

2.1 Assessment Results of the English Language Course Final Examination and Clinical Classification

The following is a table of results of the assessment of learning English and Clinical Classification courses.

Table 1. The results of the assessment of learning English courses and Clinical Classification

No	STUDENT NAME	ENGLISH SCORE	KK SCORE
1	RESPONDEN	80	83
2	RESPONDEN	71	55
3	RESPONDEN	78	80
4	RESPONDEN	82	71
5	RESPONDEN	81	65
6	RESPONDEN	77	57
7	RESPONDEN	87	77
8	RESPONDEN	88	85
9	RESPONDEN	74	65
10	RESPONDEN	77	84
11	RESPONDEN	83	74
12	RESPONDEN	84	86
13	RESPONDEN	73	66
14	RESPONDEN	66	78
15	RESPONDEN	87	82

16	RESPONDEN	81	91
17	RESPONDEN	72	74
18	RESPONDEN	71	78
19	RESPONDEN	85	87
20	RESPONDEN	72	71
21	RESPONDEN	68	72
22	RESPONDEN	70	78
23	RESPONDEN	89	76
24	RESPONDEN	75	84
25	RESPONDEN	73	67
26	RESPONDEN	79	87
27	RESPONDEN	80	66
28	RESPONDEN	76	56
29	RESPONDEN	67	80
30	RESPONDEN	81	80
31	RESPONDEN	66	62
32	RESPONDEN	68	65
33	RESPONDEN	74	62
34	RESPONDEN	69	64
35	RESPONDEN	92	81
36	RESPONDEN	86	80
37	RESPONDEN	87	72
38	RESPONDEN	72	55
39	RESPONDEN	71	70
40	RESPONDEN	83	70
41	RESPONDEN	81	82
42	RESPONDEN	80	61
43	RESPONDEN	73	61
44	RESPONDEN	82	11
45	RESPONDEN	68	69
46	RESPONDEN	82	84
47	RESPONDEN	70	65
48	RESPONDEN	69	68
49	RESPONDEN	61	61
50	RESPONDEN	70	55
51	RESPONDEN	76	74
52	RESPONDEN	81	88
53	RESPONDEN	76	77
54	RESPONDEN	73	66
55	RESPONDEN	78	80
56	RESPONDEN	74	55
57	RESPONDEN	69	59

4.2 Statistical Processing Results of Mean, Median and Mode using SPSS 16.0

Based on statistical data processing using SPSS 16.0, the results of the Mean, Median and Mode of English scores are as follows:
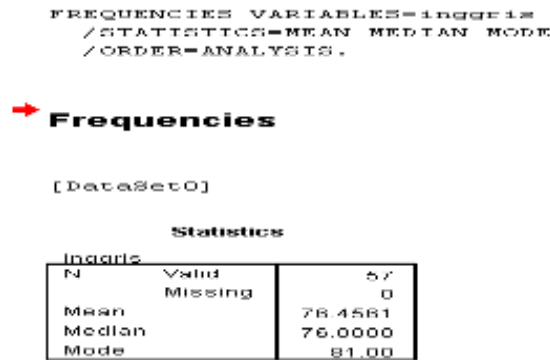
```
FREQUENCIES VARIABLES=inggris
  /STATISTICS=MEAN MEDIAN MODE
  /ORDER=ANALYSIS.
```

→ Frequencies

[DataSet0]

Statistics

Inggris

N	Valid	57
	Missing	0
Mean		76.4561
Median		76.0000
Mode		81.00

Figure 1. Results of Mean, Median and Mode Statistical Assessment on English scores

From the picture above, for the assessment of the Mean, Median and Mode in the English course, it is known that from a total of 57 students or respondents, a Mean value of 76.45 was obtained; Median 76.00 and Mode 81.00.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	61	1	1.8	1.8	1.8
	66	2	3.5	3.5	5.3
	67	1	1.8	1.8	7.0
	68	3	5.3	5.3	12.3
	69	3	5.3	5.3	17.5
	70	3	5.3	5.3	22.8
	71	3	5.3	5.3	28.1
	72	3	5.3	5.3	33.3
	73	4	7.0	7.0	40.4
	74	3	5.3	5.3	45.6
	75	1	1.8	1.8	47.4
	76	3	5.3	5.3	52.6
	77	2	3.5	3.5	56.1
	78	2	3.5	3.5	59.6
	79	1	1.8	1.8	61.4
	80	3	5.3	5.3	66.7
	81	5	8.8	8.8	75.4
	82	3	5.3	5.3	80.7
	83	2	3.5	3.5	84.2
	84	1	1.8	1.8	86.0
	85	1	1.8	1.8	87.7
	86	1	1.8	1.8	89.5
	87	3	5.3	5.3	94.7
	88	1	1.8	1.8	96.5
	89	1	1.8	1.8	98.2
	92	1	1.8	1.8	100.0
	Total	57	100.0	100.0	

Figure 2. Results of Statistical Processing of English Values using SPSS 16.0

Based on the picture above, it is known that the highest frequency distribution is at a value of 81, a total of 5 students with a percentage of 8.8% and a cumulative percentage of 75.4%

Results Mean, Median and Mode of Clinical Classification values using SPSS 16.0

```
FREQUENCIES VARIABLES=KK
    /STATISTICS=MEAN MEDIAN MODE
    /ORDER=ANALYSIS.
```

➤ Frequencies

[DataSet0]

Statistics

NILAI KLASIFIKASI KLINIS

N	Valid	57
	Missing	0
Mean		71.0877
Median		72.0000
Mode		80.00

Figure 3. Statistical Assessment Results Mean, Median and Mode on Clinical Classification scores

Based on the picture above for the assessment of the Mean, Median and Mode in the Clinical Classification course, it is known that from a total of 57 students or respondents, a Mean value of 71.08 was obtained; Median 72.00 and Mode 80.00.

Table 2. Results of Statistical Processing of Clinical Classification Values using SPSS 16.0

CLINICAL CLASSIFICATION VALUE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	11	1	1.8	1.8	1.8
	55	4	7.0	7.0	8.8
	56	1	1.8	1.8	10.5
	57	1	1.8	1.8	12.3
	59	1	1.8	1.8	14.0
	61	3	5.3	5.3	19.3
	62	2	3.5	3.5	22.8
	64	1	1.8	1.8	24.6
	65	4	7.0	7.0	31.6
	66	3	5.3	5.3	36.8
	67	1	1.8	1.8	38.6
	68	1	1.8	1.8	40.4
	69	1	1.8	1.8	42.1
	70	2	3.5	3.5	45.6
	71	2	3.5	3.5	49.1
	72	2	3.5	3.5	52.6
	74	3	5.3	5.3	57.9
	76	1	1.8	1.8	59.6
	77	2	3.5	3.5	63.2
	78	3	5.3	5.3	68.4
	80	5	8.8	8.8	77.2
	81	1	1.8	1.8	78.9
	82	2	3.5	3.5	82.5
	83	1	1.8	1.8	84.2
	84	3	5.3	5.3	89.5
	85	1	1.8	1.8	91.2

86	1	1.8	1.8	93.0
87	2	3.5	3.5	96.5
88	1	1.8	1.8	98.2
91	1	1.8	1.8	100.0
Total	57	100.0	100.0	

Based on the picture above, it is known that the highest frequency distribution is at a value of 80, a total of 5 students with a percentage of 8.8% and a cumulative percentage of 77.2%.

2.3 Correlation Analysis Results

2.3.1 Analysis based on comparison of rcount and rtable

The following are the results of the Correlation Analysis of English Language Values and Clinical Classification using SPSS 16.0.

```
CORRELATIONS
  /VARIABLES=X Y
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

[DataSet0]

Correlations

		Kompetensi Bahasa Inggris	Kompetensi Pengodean
Kompetensi Bahasa Inggris	Pearson Correlation	1	.324'
	Sig. (2-tailed)		.014
	N	57	57
Kompetensi Pengodean	Pearson Correlation	.324'	1
	Sig. (2-tailed)	.014	
	N	57	57

*. Correlation is significant at the 0.05 level (2-tailed).
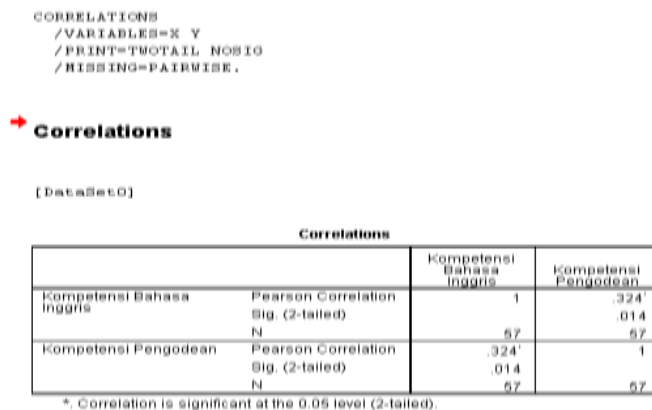
Figure 4. Statistical Analysis Results of the Pearson Correlations Sig. (2-tailed) Test

Based on the picture above, it is known that the results of the correlation values are:

rtabel   = df (N-2,0,05)

                 = df (57-2,0,05)   = 0,2609

Diketahui rhitung   = 0,324 dan rtabel   = 0,2609

0,324 > 0,2609, so Ho (Hipotesis o) "accepted).

This means that the variables X and Y have a positive relationship.

2.3.1 Analysis of significance value

Significance Value (2-tailed) of : 0.014

0.014 <0.05 means that there is a significant relationship between the variables X and Y.

It can be concluded that the English language ability variable (X) and the coding ability variable (Y) have a significant relationship with each other.

2.3.2 Pearson Correlations . Value Analysis

Pearson Correlations Value

Value = 0, there is no relationship

Value = 0,014 there is a relationship

2.4 Analysis Based on Questionnaire Results

This study uses student assessments from questionnaires on Google Forms with several questions with the following results:

2.4.1 The Importance of Clinical Classification Courses in Coding Speed and Accuracy
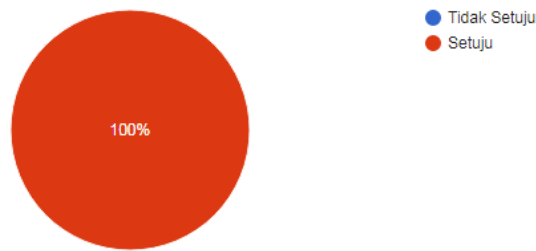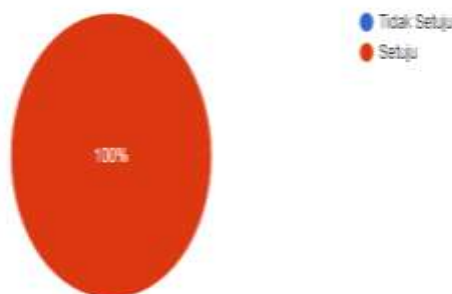

Figure 5. Respondents' Assessment Results in Question 1

Based on the results of the questionnaire related to the Importance of Clinical Classification Courses in Speed and Accuracy of Coding, 100% of respondents answered agree that the Clinical Classification course is very important for the speed and accuracy of coding.

4.4.2 Assessment results from the final examination of the Clinical Classification course

Figure 6. Respondents' Assessment Results in Question 2

Based on the results of the questionnaire related to the results of the final examination of the Clinical Classification course, 100% of the respondents answered agreed that the final exam score for the Clinical Classification course was very satisfactory.

2.4.3 The Importance of English Courses in Supporting Coding Skills in KK courses.

Figure 7. Respondents' Assessment Results in Question 3

Based on the results of the questionnaire related to the importance of English courses in supporting coding skills in family planning courses, 100% of the respondents agreed that English courses can support coding skills in family planning courses.

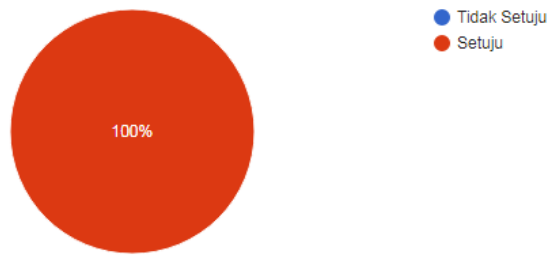**4.4.4 Assessment results from the final exam for English courses**

Figure 8. Respondents' Assessment Results in Question 4

Based on the results of the questionnaire related to the results of the final exam for English courses, 100% of respondents answered agree that the final exam scores for English subjects were very satisfactory.

4.4.5 The results of the assessment of the competence to understand English vocabulary in speed and accuracy in coding in the KK . course

Figure 7. Respondents' Assessment Results in Question 5

Based on the results of the related questionnaire. The results of the assessment of the competence to understand English vocabulary in speed and accuracy in coding in the KK course 100% of respondents answered agree that understanding the vocabulary in English is very helpful in speed and accuracy in coding in the KK course.

3.1 Discussion

The results of the assessment of the obstacles faced by respondents when coding in the Clinical Classification course

Based on the results of the related questionnaire, the obstacles faced by respondents when coding in the Clinical Classification course are as follows:

My problem is that my vocabulary is still minimal, so I sometimes hesitate in coding. On the ICD-10 to find the accuracy of the code using English and medical".

"Constraints such as not memorizing English vocabulary too well, especially when looking for ledterms for coding, so they have to learn a lot more to memorize English vocabulary."

"It takes a long time in coding the patient's illness if we can't or memorize English vocabulary, maybe we have to look for English first to g.translate when looking for the ledterm".

1. Lack of understanding of English vocabulary and medical terms.

2. Less fast for coding, still lacking in mastering medical language.

3. Looking for vocabulary that has not been memorized is difficult to find the disease code

4. Vocabulary in medical languages that have not been mastered and speed in finding disease codes on ICD 10.

From some of the student opinions that have been put forward, it is known that in general the obstacles faced by students are the limited English vocabulary possessed by students so that they are an obstacle for them in coding in KK courses. Furthermore, students at Apikes Iris also had problems in determining the lead term for coding.

The results of the assessment of the relationship between English language skills and the ability to code in the Clinical Classification course

Based on the results of the questionnaire related to the relationship between English language skills and coding skills in the Clinical Classification course, there are several opinions from student respondents:

"As in terms of vocabulary, medical vocabulary also uses English a lot, so English is very helpful in clinical classification courses. because there are already a lot of vocabulary in English courses, and how about the spelling, making it easier to search for keywords in searching on icd 10 "

"Because in accordance with the WHO's decision to classify diseases in the world, they are written in English and medical. So learning English makes it easier to understand disease codes in English."

"With coding, we found a lot of English/medical vocabularies, for that reason, English language skills with coding for clinical classification courses are very close. Learning English can help in coding speed and accuracy."

"In my opinion, all of the coding is in English and medical language. By learning English, this makes it easier for students to speed and accuracy in coding."

1. Because in accordance with WHO's decision to classify diseases, they are written in English and medical. So that learning English makes it easier to understand disease codes in English.

2. The relationship between English language skills and the ability to code in KK courses is that he is able to adjust between medical languages and foreign languages, for example English, English is very useful for the medical team or when coding diagnoses.

3. As a medical recorder which is the heart of the hospital, surely in the future a hospital that already has international standards where we work, there will be many patients from abroad. The importance of English is also necessary when we communicate with foreign patients and when data entry and coding. The relationship between English and medical records in coding is very important. Why? Because in ICD 10 everything uses English vocabulary and medical terms. If we can speak English, it will make it easier for us to find the patient's disease code on ICD 10. And also in ICD 9 the same thing applies, where all the contents use English and medical terms.

From some of the student opinions that have been put forward, it is known that the relationship between English language skills and the ability to code in the Clinical Classification course has a significant relationship, the better the English value possessed by a student, the better the Clinical Classification score he gets.

III.CONCLUSION

English communicative competence is very much needed for Medical Recorder DIII students because students have not realized the importance of their communication competence and are still focused on achieving written scores. It is difficult to prove to students the important value of communicative competence in English to

improve the main competencies in medical recorders, one of which is the ability to use ICD 10 in the Clinical Classification course. From the results of this study, the authors obtained results where there was a positive correlation where the higher the student's English score, the higher the Clinical Classification score. In addition to this this research shows it has a significant effect.

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