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## **Analysis of Using Structural Equation Modeling of the Publipreneur-Based Language Learning Approach for Specific Purposes at Polimedia**

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**Abstract:** This study develops and validates a standardized instrument for assessing students' perceptions of the Publipreneur-Based Language Learning (PBL) approach and examines its structural relationships with five key outcomes—motivation, technology use, constructive lecturer feedback, student collaboration, and perceived relevance to learning objectives—within the English for Specific Purposes context at Polimedia Kreatif Jakarta. Using a cross-sectional survey design, data were collected from 530 undergraduate students (population = 538) and analyzed with structural equation modeling in LISREL 8.80. Thirty-two items met the criteria for reliability and validity (Composite Reliability = 0.99; Average Variance Extracted = 0.86). Overall model fit indices indicated a well-specified model (RMSEA, RMR, CFI, TLI/NNFI, NFI, IFI, PGFI, PNFI, and RFI all within acceptable thresholds).



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Hypothesis testing revealed significant positive effects of PBL on student motivation ( $t = 17.80$ ), technology use ( $t = 16.99$ ), constructive feedback ( $t = 17.56$ ), collaboration ( $t = 15.63$ ), and relevance to learning objectives ( $t = 19.14$ ) (all  $p < .01$ ). These findings underscore PBL's pedagogical value in fostering learner engagement and goal alignment. Practitioners are encouraged to refine classroom practices by closely monitoring student responses to each construct, while researchers should consider replicating the model across diverse contexts to enhance generalisability and enrich the empirical literature on PBL.

**Keywords:** Publipreneur-based language learning (PBL); structural equation modeling (SEM); student motivation; educational technology adoption; constructive feedback; collaborative learning; learning relevance.

## 结构方程模型在波利米达特定用途语言学习方法中的应用分析

**摘要：**本研究开发并验证了一种标准化工具，用于评估学生对公共创业型语言学习 (PBL) 方法的想法，并考察了该方法与五个关键结果 (动机、技术使用、建设性讲师反馈、学生协作以及感知到的与学习目标的相关性) 的结构关系，研究范围涵盖雅加达创意媒体专门用途英语 (Polimedia Kreatif Jakarta)。本研究采用横断面调查设计，收集了 530 名本科生 (总人数 = 538 人) 的数据，并使用 LISREL 8.80 中的结构方程模型进行分析。其中 32 个项目符合信度和效度标准 (综合信度 = 0.99; 提取的平均方差 = 0.86)。整体模型拟合度指数表明模型拟合良好 (RMSEA、RMR、CFI、TLI/NNFI、NFI、IFI、PGFI、PNFI 和 RFI 均在可接受的阈值范围内)。假设检验显示，PBL 对学生学习动机 ( $t = 17.80$ )、技术使用 ( $t = 16.99$ )、建设性反馈 ( $t = 17.56$ )、协作 ( $t = 15.63$ ) 以及与学习目标的相关性 ( $t = 19.14$ ) 均具有显著的积极影响 (所有  $p < .01$ )。这些发现凸显了 PBL 在促进学习者参与度和目标一致性方面的教学价值。鼓励实践者通过密切监测学生对每个概念的反应来改进课堂实践，同时研究人员应考虑在不同情境中复制该模型，以增强其普遍性并丰富 PBL 的实证文献。

**关键词：**基于公共企业家的语言学习；结构方程模型；学生动机；教育技术采用；建设性反馈；协作学习；学习相关性

### 1. Introduction

Higher education is currently facing such rapid advances in science and technology that educational institutions inevitably have to accept this reality; otherwise, education will be left behind and the impact will be on graduates who do not have the ability. Therefore, educational institutions must have teaching staff who are able to adapt to the development of science and technology as well as be able to innovate learning, so that the objectives of learning activities can be achieved optimally. Currently, teaching staff (Lecturers) of universities are making efforts to improve several elements including: 1) freedom in learning, 2) use of information technology, 3) entrepreneurship and, 4) learning innovation. The student elements include: 1) critical thinking skills, 2) creative thinking, 3) communication skills, 4) fighting spirit and, 5) collaboration [1].

If the above elements can be realized, the quality of educational institutions will increase and the impact on the quality of graduates who are able to answer the challenges of the times will be significant. One of the efforts of lecturers is to innovate learning, namely, creating the right learning approach. Currently, the approaches used in higher education institutions are quite numerous and diverse, such as Contextual Teaching and Learning, Scientific Approach, Teacher-Centered Approach, Student-Centered Approach, Model-Based Deep Learning, Cognitive Academic Language Learning Approach, Problem-Based Learning Models [2-5]. One of these learning approaches is the Publipreneur Based Language Learning (PBL) learning approach, which is a learning approach that stimulates students to think critically, creatively, problem solving skills and motivates students to learn entrepreneurial English language skills [6].

The Publipreneur Based Language Learning (PBL) learning approach was initially classroom action research where at that time it always faced various problems such as some students did not have good English language skills, especially those related to entrepreneurship, difficulty in thinking creatively [6]. Along with the demands of teaching and learning needs, PBL was developed into a holistic learning approach that has goals such as increasing student motivation, being able to utilize information technology as a learning medium, constructive, collaborative, critical and creative thinking and communication skills both verbally, in writing and listening [6]. The fundamental problem in this study is that the PBL approach does not yet have a standard instrument to measure attitudes and student responses to the implementation of PBL, especially those related to the objectives of PBL itself, namely being able to increase student motivation, use of technology, constructive feedback from lecturers, collaboration and relevance to learning objectives. Thus, there is a need for an instrument (scale) to measure students' attitudes and important aspects in the learning approach and to determine the influence of the PBL approach on motivation, use of technology, constructive feedback from lecturers, collaboration and relevance to learning objectives.

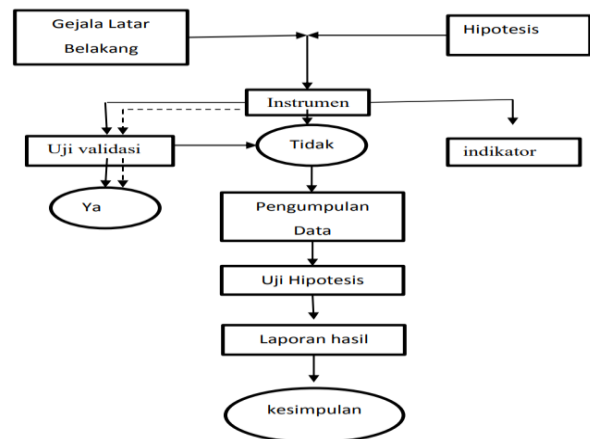
## 2. Methods

Conceptually, the research method is a systematic way taken by researchers in collecting data and analyzing data to answer research problems. The method used is a survey with a quantitative approach, namely a method that focuses on collecting data that can be measured and analyzed using statistics [7]. Several stages of this research are as follows:

### 2.1. Research Design

The approach used in this study is a quantitative

approach because the data collected is analyzed using both descriptive and inferential statistics. Figure 1 shows the research flow chart.



**Figure 1. Research Procedure Diagram** (elaborated by the authors)

### 2.2. Population and Sample

Population is a generalization area consisting of objects/subjects that have certain quantities and characteristics determined by researchers to be studied and then conclusions drawn [8]. The type of population used in this study is the target population, namely the type of population deliberately selected for a specific purpose. Regarding this study, the target population will be all first semester students of Polymedia Kreatif Jakarta in the 2024 academic year, totaling 538 people. Then, the sample is part of the population. The research sample is part of the population taken as a data source and can represent the entire population [9].

Critical questions that can be asked in the SEM model research: "How many samples are needed?". In general, using the Maximum Likelihood Estimation (MLE) estimation method will be effective for sample sizes between 150 and 400 [10].

**Table 1. Population and required sample sizes calculated with Slovin's formula ( $e = 0.01$ )** (compiled by the authors)

Study program	Population		Required Sample Size (n)
	(N)	$1 + N (e)^2$	
Photography	220	1,022	215.2642
Publishing	170	1,017	167.1583
Broadcast	84	1.0084	83.30028
Game			
Technology	64	1.0055	63.64993
<b>Total</b>	<b>538</b>		<b>529.3727</b>

To determine the sample size from the population using the Sloving formula:  $s = N/1 + N (0.01)^2$ . The distribution of the population and samples in the study programs using the proportionate random sampling

technique with a margin of error of 0.01 is presented in Table 1.

Therefore, the number of samples in the study was 529,3727, with 530 respondents.

**2.3. Research Instrument Grid**

Research on the application of the PBL learning approach that focuses on the dimensions of motivation, use of technology, constructive feedback from lecturers

to students, collaboration and relevance to learning objectives. The number of statement items for each dimension is presented in Table 2.

**Table 2. Blueprint of the Publipreneur-Based Language Learning (PBL) instrument** (compiled by the authors)

Latent Variable	Dimension	Illustrative Item Indicators*	Items (n)
PBL	Motivation	Encouragement to learn; Enjoyment of learning; Enthusiasm for learning; self-confidence; Fear of failure; courage to act	6
	Technology Use	Ease of access to relevant content; preparation of learning tools; availability of reference sources; use of social media; engaging learning activities;	5
	Constructive feedback	Lecturer dominance; responsiveness to questions; lecturer elaboration; cooperative atmosphere; lecturer assistance; flexible guidance	6
	Collaboration	Help from peers when needed; effective communication; knowledge sharing; tolerance; mutual support; caring attitude	6
	Relevance to the Learning Goals	1.Generation of creative ideas; life relevance; autonomy in learning; writing skills; listening skills; learning flexibility; vocabulary mastery; sentence formation; native-like imitation; active/passive vocabulary use; comprehension of complex sentences; expression of ideas; vocabulary expansion	13
Total number of items			36

Note: \* Only representative phrasing is shown; full questionnaire wording is available upon request.

The research instrument was a Likert model questionnaire consisting of 1-4 answer choices from statement items regarding the implementation of the PBL learning approach. Table 3 shows the results obtained.

**Table 3. Likert scale model answer scores** (compiled by the authors)

Answer	Score
Strongly agree	4
Agree	3
Disagree	2
Strongly Disagree	1

**2.4. Instrument Trial**

Before being used, the instrument must be tested first to determine its validity and reliability of the instrument by correlating the score of each item with the total score in order to determine the quality of the instrument items used [11-12]. The validity provisions of the instrument can be seen from the p-value <0.01. If the p-value > 0.01, the item is dropped or discarded. For validity testing with the Pearson Product Moment equation, the raw numbers are as follows:

$$r_{xy} = \frac{n \sum(XY) - (\sum X)(\sum Y)}{\sqrt{\{n \sum X^2 - (\sum X)^2 (n \sum Y^2 - \sum Y)^2\}}}$$

Description: n = number of respondents, x = number of statement items, y = total number of statement items.

Then the item reliability test or determination test functions to see the reliability of an item by using Cronbach's Alpha with the following equation:

$$r_{11} = \frac{n}{n - 1} \left(1 - \frac{\sum S_i^2}{S_t^2}\right)$$

Information: r<sub>11</sub> = reliability of the test sought, number of items, number of variants of each item score, number of variants of the total score. For the threshold value of the Alpha Cronbach, there is no standard provision from experts. There are also experts who argue that the Cronbach's alpha value > 0.50 is considered reliable. For this study, the item reliability provision was used between 0.70 and 0.90 [13-14]. The results of the instrument trial from the 20 respondents are given in Table 4: n = S<sub>i</sub><sup>2</sup> = S<sub>t</sub><sup>2</sup> =

**Table 4. Instrument trial results** (compiled by the authors)

No	Item	N	Correlation	P-Value	Valid/No	Cronbach
1	Motivation to Learn	20	0.876	0.000	Valid	0.937
2	Happy Learning	20	0.910	0.000	Valid	0.937

3	Eager to learn	20	0.710	0.000	Valid	0.937
4	Self-confident	20	0.820	0.000	Valid	0.937
5	According to Character	20	0.575	0.000	Valid	0.937
6	Fear	20	0.598	0.000	Valid	0.937
7	Brave	20	0.792	0.000	Valid	0.937
8	Access	20	0.730	0.000	Valid	0.937
9	Preparation	20	0.602	0.000	Valid	0.937
10	Reference	20	0.614	0.000	Valid	0.937
11	Social media	20	0.692	0.000	Valid	0.937
12	Interesting Mediabeljr yg Menara	20	0.710	0.000	Valid	0.937
13	Lecturer Access	20	0.532	0.000	Valid	0.937
14	Lecturer Elaboration	20	0.747	0.000	Valid	0.937
15	Lecturer Support	20	0.790	0.000	Valid	0.937
16	Question Response	20	0.790	0.000	Valid	0.937
17	Master the Material	20	0.832	0.000	Valid	0.937
18	Help Difficulty	20	0.790	0.000	Valid	0.937
19	Communication	20	0.797	0.000	Valid	0.937
20	Sharing	20	0.691	0.000	Valid	0.937
21	Tolerant	20	0.739	0.000	Valid	0.937
22	Mutual Support	20	0.742	0.000	Valid	0.937
23	Care	20	0.579	0.000	Valid	0.937
24	Creative Idea	20	0.598	0.000	Valid	0.937
25	Free	20	0.574	0.000	Valid	0.937
26	Relevant To Life	20	0.685	0.000	Valid	0.937
27	Competence	20	0.813	0.000	Valid	0.937
28	Write	20	0.687	0.000	Valid	0.937
29	Listening	20	0.563	0.000	Valid	0.937
30	Flexible	20	0.544	0.000	Valid	0.937
31	Vocabulary	20	0.805	0.000	Valid	0.937
32	Simple Sentence	20	0.892	0.000	Valid	0.937
33	Native Speaker	20	0.901	0.000	Valid	0.937
34	Active Passive Vocabulary	20	0.711	0.000	Valid	0.937
35	Complex Sentences	20	0.638	0.000	Valid	0.937
36	Reveal Thoughts	20	0.886	0.000	Valid	0.937

From the results of the instrument trial on the 20 respondents in table 5 above, it was found that overall, 36 items had a good level of validity with a p-value of  $0.000 < 0.05$ . Likewise, the results of the reliability test obtained  $0.937 > 0.40$ , so that these items are suitable for use in further research.

### 3. Results and Discussion

The study objective was to investigate how does PBLL affect motivation, use of technology, interactive feedback and collaboration and relevance to the learning

objectives of students of Creative Polymedia Jakarta when implementing the PBLL learning approach.

The descriptive statistics of the research results summarizing the characteristics of the dataset are given in Tables 5-9.

#### 3.1. Descriptive Analysis

##### 3.1.1. Dimensions of Motivation

Motivational dimension data with 7 items with 530 respondents. The total score of the research results is 9,883, and the ideal score is:  $7 \times 530 \times 4 = 14,840$  if all respondents answer "Strongly Agree" with a score of 4.

**Table 5. Descriptive statistics of the motivation dimensions (compiled by the authors)**

No	Item	Mean	Std. Deviation	Variance	Min	Max	Sum
1	Motivation to learn	3,125	0.583	0.340	1	4	1,653
2	Happy learning	2,856	0.806	0.650	1	4	1,511
3	Eager to learn	2,312	0.709	0.503	1	4	1,223
4	Self-confident	2,919	0.609	0.370	1	4	1,544
5	According to character	2,134	0.778	0.605	1	4	1,129
6	Fear	2,418	0.742	0.551	1	4	1,279
7	Brave	2,919	0.642	0.412	1	4	1,544
	<b>Total</b>	<b>18,683</b>	<b>4,869</b>	<b>3.431</b>	<b>7</b>	<b>28</b>	<b>9,883</b>

The percentage of answer tendencies with the total research score/ideal score was found to be  $9883/14840 = 0.66$  (66%).

Choice	SS	S	TS	STS
Score	4	3	2	1
Percent %	100%	75- 66%	50%	25%

Therefore, the tendency of respondents to answer on the motivation dimension is 66%. Therefore, it can be

**Table 6. Descriptive statistics technology dimension** (compiled by the authors)

No	Item	Mean	Std. Deviation	Variance	Min	Max	Sum
1	Access	2,828	0.653	0.427	1	4	1,496
2	Preparation	3,072	0.549	0.302	1	4	1,625
3	Reference	3.157	0.564	0.318	1	4	1,670
4	Social media	3.272	0.527	0.278	1	4	1,731
5	Interesting media	3.023	0.624	0.39	1	4	1,599
<b>Total</b>		<b>15,352</b>	<b>2.221</b>	<b>4.933</b>	<b>5</b>	<b>20</b>	<b>8,121</b>

The percentage of answer tendencies with the total research score/ideal score was found to be  $8121/10600 = 0.76$  (76%).

Choice	SS	S	TS	STS
Score	4	3	2	1
Percent %	100%	76%75%	50%	25%

Therefore, the tendency of respondents to answer on the technology usage dimension is 76%. Therefore, it can be concluded that the tendency of respondents to

**Table 7. Descriptive Statistics Dimensions of the Constructive Feedback** (compiled by the authors)

No	Item	Mean	Std. Deviation	Variance	Min	Max	Sum
1	Access_lecturer	2,992	0.637	0.405	1	4	1,583
2	Lecturer_elaboration	2,134	0.550	0.302	1	3	1,129
3	Lecturer_support	2,318	0.669	0.448	1	4	1,226
4	Question_response	3,127	0.537	0.289	1	4	1,654
5	Master the material	2,945	0.650	0.423	1	4	1,558
<b>Total</b>		<b>29,868</b>	<b>3.608</b>	<b>13.017</b>	<b>18</b>	<b>40</b>	<b>7,150</b>

The percentage of answer tendencies with the total research score/ideal score was found to be  $7150/10600 = 0.67$  (67%).

Choice	SS	S	TS	STS
Score	4	3	2	1
Percent %	100%	75% 67%	50%	25%

Therefore, the tendency of respondents to answer on the constructive feedback dimension is 67%. Therefore, it can be concluded that the tendency of respondents to

**Table 8. Descriptive statistics of collaboration dimensions** (compiled by the authors)

No	Item	Mean	Std. Deviation	Variance	Min	Max	Sum
1	Helping_difficulties	3,093	0.558	0.311	1	4	1,636
2	Communication	3,146	0.630	0.397	1	4	1,664

concluded that the tendency of respondents to choose the answer to the statement item on the motivation dimension is in the "Agree" area.

### 3.1.2. Use of Technology

Technology usage dimension data with 5 items with 530 respondents. The total score of the research results is 8121, and the ideal score is:  $5 \times 530 \times 4 = 10600$  if all respondents answer "Strongly Agree" with a score of 4.

choose the answer to the statement item on the technology usage dimension is in the "Agree" area.

### 3.1.3. Dimensions of the Lecturer's Constructive Feedback to Students

Data on the dimensions of the use of constructive feedback by lecturers to students with 5 items with 530 respondents. The total score of the research results is 7150, and the ideal score is:  $5 \times 530 \times 4 = 10600$  if all respondents answer "Strongly Agree" with a score of 4.

choose the answer to the statement item on the dimension of the use of constructive feedback from lecturers to students is in the "Agree" area.

### 3.1.4. Dimensions of Student Collaboration

Student collaboration dimension data with 6 items with 530 respondents. The total score of the research results is 9938, and the ideal score is:  $6 \times 530 \times 4 = 12720$  if all respondents answer "Strongly Agree" with a score of 4.

3	Sharing	2,936	0.374	0.140	1	4	1,553
4	Tolerant	3,214	0.502	0.252	1	4	1,700
5	Mutual_support	3,261	0.564	0.318	1	4	1,725
6	Care	3,138	0.555	0.309	1	4	1,660
Total		18,786	2.254	5.081	10	24	<b>9,938</b>

The percentage of answer tendencies with the total research score/ideal score was found to be  $9,938/12,720 = 0.78(78\%)$ .

Choice	SS	S	TS	STS
Score	4	3	2	1
Percent %	100%	78%75%	50%	25%

Therefore, the tendency of respondents to answer on the collaboration dimension is 78%. Therefore, it can be concluded that the tendency of respondents to choose the

answer to the statement item on the collaboration dimension is in the “Agree” area.

### 3.1.5. Dimension of Relevance to the Learning Objectives

Data on the relevance dimension to learning objectives with 13 items with 530 respondents. The total score of the research results is 20694, and the ideal score is:  $13 \times 530 \times 4 = 27768$  if all respondents answer “Strongly Agree” with a score of 4.

**Table 9. Descriptive statistics relevance dimensions (compiled by the authors)**

No	Item	Mean	Std. Deviation	Variance	Min	Max	Sum
1	creative idea	2.265	0.762	0.581	1	4	1,198
2	Free	3,539	0.836	0.700	1	4	1,872
3	Relevant to life	2,907	0.646	0.418	1	4	1,538
4	Competence	3,036	0.604	0.364	1	4	1,606
5	Write	2,957	0.619	0.383	1	4	1,564
6	Listening	3,038	0.566	0.321	1	4	1,607
7	Flexible	3,028	0.610	0.372	1	4	1,602
8	Vocabulary	3,231	0.567	0.322	1	4	1,709
9	Simple sentence	3,117	0.588	0.346	1	4	1,649
10	Native speaker	2,809	0.699	0.488	1	4	1,486
11	Active passive vocabulary	3,106	0.577	0.333	1	4	1,643
12	Complex sentences	3,034	0.589	0.347	1	4	1,605
13	Express thoughts	3,053	0.604	0.365	1	4	1,615
Total		39,119	5.570	31,022	16	52	<b>20,694</b>

The percentage of answer tendencies with the total research score/ideal score was found to be  $20694/27768 = 0.74 (74\%)$ .

Choice	SS	S	TS	STS
Score	4	3	2	1
Percent %	100%	75%74%	50%	25%

Therefore, the tendency of respondents to answer on the dimension of relevance to learning objectives is 74%. Therefore, it can be concluded that the tendency of respondents to choose the answer to the statement item on the dimension of relevance to learning objectives is in the “Agree” area.

## 3.2. Correlation Analysis

The correlation results are obtained by correlating the item scores with the total score using Pearson’s product moment correlation with the aim of identifying positive and negative correlations or strong or weak correlations. In SEM, the confirmatory factor analysis (CFA) model, correlation analysis is absolutely necessary because SEM will experience errors if the items used are negatively correlated with the total score. The results of the correlation test on each PBLL dimension are presented in Tables 10-14.

### 3.2.1. Correlation of the Motivation Dimension Items

The correlation of 7 motivation dimension items in Table 10 demonstrated that each has a positive correlation with a p-value  $< 0.001$  at a 99% confidence level, which indicates that these items can be used for further analysis.

**Table 10. Correlation of the motivation items (compiled by the authors)**

No	Motivational Items	N	Pearson’s r	P-value
1	Motivation to learn	529	0.486	$> 0.001$
2	Happy learning	529	0.571	$> 0.001$

3	Eager to learn	529	0.536	> 0.001
4	Self-confident	529	0.508	> 0.001
5	According to character	529	0.584	> 0.001
6	Fear	529	0.452	> 0.001
7	Brave	529	0.450	> 0.001

### 3.2.2. Correlation of the Technology Usage Dimension Items

The correlation of 5 items of technology use dimensions in Table 11 revealed that each has a positive

correlation with a p-value <0.001 at a 99% confidence level, which indicates that these items can be used for further analysis.

**Table 11. Correlation of technology usage items** (compiled by the authors)

No	Technology Items	N	Pearson's r	P-value
1	Access	529	0.779	> 0.001
2	Preparation	529	0.780	> 0.001
3	Reference	529	0.697	> 0.001
4	Social media	529	0.732	> 0.001
5	Mediabeljr is interesting	529	0.808	> 0.001

### 3.2.3. Correlation of the Constructive Feedback Dimension Items

The correlation of 5 items of the constructive feedback dimensions in Table 12 showed that each

partially has a positive correlation with a p-value <0.001 at a 99% confidence level, but for the item 'lecturer support' it has a correlation of 0.048 and a p-value >0.001 so that the item is dropped and not used for further analysis.

**Table 12. Correlation of the constructive feedback items** (compiled by the authors)

No	Constructive feedback items	N	Pearson's r	P-value
1	Lecturer access	529	0.724	< .001
2	Elaboration lecturer	529	0.643	< .001
3	Lecturer support	529	0.048	>.001
4	Response to the questions	529	0.650	< .001
5	Mastery of the material	529	0.543	< .001

### 3.2.4. Collaboration Dimension Item Correlation

The correlation of the 6 collaboration dimension items in Table 13 demonstrated that each has a positive

correlation with a p-value <0.001 at a 99% confidence level, which indicates that these items can be used for further analysis.

**Table 13. Correlation of the collaboration items** (compiled by the authors)

No	Collaboration items	N	Pearson's r	P-value
1	Helping difficulties	529	0.725	> 0.001
2	Communication	529	0.739	> 0.001
3	Sharing	529	0.471	> 0.001
4	Tolerance	529	0.699	> 0.001
5	Support each other	529	0.766	> 0.001
6	Care	529	0.765	> 0.001

### 3.2.5. Correlation of Relevance Dimensions Items with Learning Objectives

The correlation of 13 items of the relevance dimension with learning objectives in Table 14 revealed that each mostly has a positive correlation with a p-value

<0.001 at a 99% confidence level, but for the item 'creative ideas' it has a correlation of 0.0005 and a p-value >0.001 so that the item is dropped and not used for further analysis.

**Table 14. Item relevance correlation** (compiled by the authors)

No	Relevance items	N	Pearson's r	P-value
1	Creative ideas	529	0.0005	> 0.001
2	Free	529	0.572	> 0.001

3	Relevant to the future	529	0.775	> 0.001
4	Competence	529	0.770	> 0.001
5	Write	529	0.661	> 0.001
6	Listening	529	0.730	> 0.001
7	Flexible	529	0.786	> 0.001
8	Vocabulary	529	0.732	> 0.001
9	Simple sentences	529	0.791	> 0.001
10	Native speaker	529	0.715	> 0.001
11	Active passive vocabulary	529	0.817	> 0.001
12	Complex sentences	529	0.801	> 0.001
13	Express your thoughts	529	0.812	> 0.001

### 3.3. Confirmatory Factor Analysis (CFA) Analysis

Confirmatory Factor Analysis is a measurement showing that a latent is measured by one or more construct variables. At this stage, it does not involve a higher hierarchy of latent variables as found in the second order. CFA analysis aims to see the standard loading value of the construct variable (item) that measures the latent variable [15]. Provisions: the standard loading value is accepted if the t-value  $\geq 2.58$ . Visually, the path diagram of the first-order CFA model can be in Figure 2.

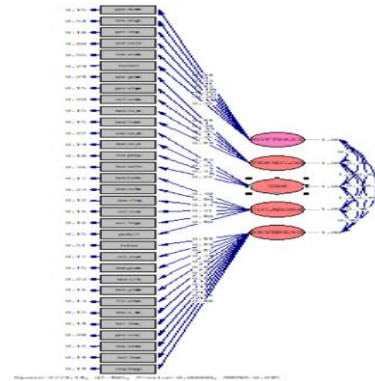


Figure 2. CFA path diagram (elaborated by the authors)

#### 3.3.1. Latent Variable of Motivation

For more clarity, the values – standard loading, error, t-value and R Square in the path diagram Figure 2) are presented in Table 15.

Table 15. Motivation CFA (compiled by the authors)

Construction	Loading	Error	t-value	R2	Information
Motivation to learn	0.44	0.023	19.04	0.57	Accepted
Happy to learn	0.33	0.036	9.12	0.16	Accepted
Enthusiasm for learning	0.45	0.023	19.03	0.58	Accepted
Self-confident	0.43	0.024	17.78	0.51	Accepted
According to the character	0.01	0.036	0.53	0.06	Dropped
Fear	0.05	0.034	1.58	0.05	Dropped
Courage	0.36	0.027	13.01	0.31	Accepted

The standard loading value in Table 15 contains two constructs that were dropped, namely the constructs “according to the character” and “fear”, both constructs do not meet the requirements for further analysis because the t-value  $e = 0.53$  and  $1.58 < 2.58$ .

#### 3.3.2. Latent Variable of Technology Use

The standard loading values in Table 16 overall meet the requirements for further analysis because the t-value is  $> 2.58$ .

Table 16. Use of technology CFA (compiled by the authors)

Construction	Loading	Error	t-value	R2	Information
Accessing learning resources	0.44	0.026	17.04	0.45	Accepted
Preparation of the learning materials	0.38	0.021	18.07	0.49	Accepted
Looking for references	0.35	0.023	15.30	0.38	Accepted
Use of social media	0.35	0.021	17.12	0.43	Accepted
Learning media	0.49	0.023	21.23	0.62	Accepted

#### 3.3.3. Latent Variable of the Lecturer's Constructive Feedback (compiled by the authors)

The factor loading values in Table 17 overall meet the requirements for further analysis because the t-value is  $> 2.58$ .

**Table 17. CFA Lecturer Constructive Feedback** (compiled by the authors)

Construction	Loading	Error	t-value	R2	Information
Lecturer access	0.43	0.025	16.79	0.45	Accepted
Elaboration lecturer	0.33	0.022	14.75	0.36	Accepted
Response to the questions	0.33	0.022	14.75	0.38	Accepted
Mastery of the material	0.26	0.028	9.25	0.15	Accepted

### 3.3.4. Latent Variable Collaboration

The standard loading values in Table 18 overall meet the requirements for further analysis because the t-value is  $> 2.58$ .

**Table 18. Collaboration CFA** (compiled by the authors)

Construction	Loading	Error	t-value	R2	Information
Help each other	0.38	0.022	17.28	0.46	Accepted
Communication	0.40	0.025	16.00	0.41	Accepted
Sharing	0.13	0.016	8.01	0.12	Accepted
Tolerance	0.31	0.020	15.00	0.37	Accepted
Support each other	0.40	0.022	18.23	0.50	Accepted
Care	0.40	0.022	18.36	0.51	Accepted

### 3.3.5. Latent Variable Relevance to Learning Objectives

The standard loading values in Table 19 overall meet the requirements for further analysis because the t-value is  $> 2.58$ .

**Table 19. CFA of the relevance to learning objectives** (compiled by the authors)

Construction	Loading	Error	t-value	R2	Information
Freedom in learning	0.44	0.035	12.70	0.28	Accepted
Relevance to life	0.49	0.024	20.55	0.59	Accepted
Competency builder	0.47	0.022	20.86	0.60	Accepted
Writing practice	0.39	0.025	16.03	0.40	Accepted
Listening practice	0.40	0.022	18.63	0.51	Accepted
Flexible	0.49	0.022	19.13	0.53	Accepted
Vocabulary mastery	0.41	0.022	19.13	0.53	Accepted
Active/passive sentences	0.45	0.022	20.76	0.59	Accepted
Can imitate native speakers	0.46	0.027	16.76	0.65	Accepted
Active/passive vocabulary	0.46	0.021	22.16	0.65	Accepted
Complex sentences	0.46	0.022	21.14	0.61	Accepted
Express your thoughts	0.48	0.022	21.16	0.63	Accepted

The study developed a standard instrument to measure the attitudes of students of Polimedia Kreatif Jakarta toward the implementation of PBL learning. The findings from the total number of instruments used were 36 items. The number that did not meet the requirements was 4 items, so the instrument was dropped. The remaining 32 items as standard instruments were also used as construct variables to measure latent variables in this study. The final instrument has met the requirements as an instrument, especially seen from the level of validity and reliability of the instruments. Then for the good fit index statistical model in the study, most of them have a good good fit index based on the value off valve like a model  $RMSEA = 0.08 \leq 0.08$ ,  $RMR = 0.02 \leq 0.10$ ,  $CFI = 0.96 \geq 0.90$ ,  $TLI / NNFI = 0.96 \geq 0.90$ ,  $NFI = 0.95 \geq 0.90$ ,  $IFI = 0.96 \geq 0.90$ ,  $PGFI = 0.63 \geq 0.50$ ,  $PNFI = 0.88 > 0.00$ ,  $RFI = 0.95 \geq 0.90$ . Some of these models

are better than previous research models. The study used structural equation modeling to investigate student satisfaction with mentor tutorials [16]. The results of the model fit test obtained  $RMSEA$  values =  $0.092 > 0.08$ ,  $RMR = 0.025$ ,  $CFI = 0.966$ ,  $TLI = 0.959$ . Likewise, the use of SEM with PLS to predict metaverse systems in medical education obtained  $NFI$  values  $> 0.90$  and  $RMS$  values  $> 0.12 < 0.082$  [17-18]. Then, the results of the reliability and construct validity tests obtained  $CR$  value =  $0.99 > 0.70$  and  $AVE = 0.86 > 0.50$ , which proves that the 32 constructs used have good reliability and validity. In line with the results of research conducted by [19] regarding the post-COVID 19 electronic subject teacher acceptance test. The findings showed that the reliability value  $> 0.70$  exceeded the recommendation of 0.533 [20]. Then, in line with the research

objectives, the following hypothesis test results were obtained.

### 3.4. Hypotheses Test Results

#### 3.4.1. Hypothesis 1 Test Results

There is a positive and significant influence of the PBLL approach on the motivation of Creative Polymedia students as evidenced by the  $t$ -value =  $17.80 > 2.58$ . For the regression equation, an equation is obtained:  $\text{Motivation} = 0.92 * \text{PBLL} + 0.05$  and  $R^2 = 0.84$ . Based on the regression weight in the equation, it can be predicted that if the application of PBLL is increased by 1%, student learning motivation will increase by 92%. The number of errors is 0.05, which proves the weakness of PBLL in explaining motivation by 5%. From the R square value = 0.85, it proves that the PBLL learning approach can explain student learning motivation by 84%. These findings are higher than the results of previous studies such as research on entrepreneurship and innovation learning with a multiple regression analysis model with the results of the study of the contribution of predictor variables to the response variable with a  $t$ -test value of  $8.46 > t_{\text{critical value}} 1.96$  [21].

#### 3.4.2. Hypothesis 2 Test Results

There is a positive and significant influence of the PBLL approach on the use of technology by students at Polimedia Kreatif Jakarta with a  $t$ -value =  $16.99 > 2.58$  and a regression equation:  $\text{Technology} = 1.01 * \text{PBLL} + 0.06$ ,  $R^2 = 1.02$ . From the regression equation, it can be predicted from the regression weight value that if the application of PBLL is increased by 1%, the use of technology will also increase by 1%. The standard error is 0.06, which can be interpreted that the application of PBLL cannot explain the use of technology in learning activities by 6%. Then, for the R-square value of 1.02, which proves that the PBLL learning approach can explain the use of technology by 100%. The results of the study are higher compared to previous studies such as research using SEM for student mobile learning acceptance by testing hypotheses on four construct variables. Of the four construct variables, only one has the highest value, namely the facilities variable, with a  $t$ -value of 4.319 and  $p = 0.001$  [22].

#### 3.4.3. Hypothesis 3 Test Results

There is a positive and significant influence of the PBLL approach on constructive feedback from lecturers to students of Polimedia Kreatif Jakarta with a  $t$ -value =  $17.56 > 2.58$  and a regression equation:  $\text{UBK} = 0.97 * \text{PBLL} + 0.05$ ,  $R^2 = 0.94$ . From the regression equation, it can be predicted from the regression weight value that if the implementation of PBLL is increased by 1%, the lecturer's UBK toward students will also increase by 97%. The error value of

0.05 proves that the PBLL approach cannot explain UBK by 5%. However, when viewed from the R-square value of 0.94, it means that PBLL can explain UBK by 94%. The results of this study strengthen the results of the collective feedback experiment as a treatment in the experimental group given through social media networks to improve students' writing skills which can significantly increase accuracy, fluency, and reduce complexity, making it easier to compose sentence structures, grammar and vocabulary additions [23].

#### 3.4.4. Hypothesis 4 Test Results

There is a positive and significant influence of the PBLL approach on the collaboration of students at Polimedia Kreatif Jakarta with a  $t$ -value =  $15.63 > 2.58$  and a regression equation:  $\text{collaboration} = 0.97 * \text{PBLL} + 0.06$ ,  $R^2 = 0.94$ . From the regression equation, it can be predicted from the regression weight value that if the implementation of PBLL is increased by 1%, student collaboration will increase by 97%. The error value of 0.06 proves that PBLL cannot explain collaboration by 6%, but the R-square value of 0.94 proves that PBLL can explain collaboration by 94%. The results of this study support research on web-based collaborative learning, especially regarding social communication situations, message exchange, cognitive load, and student participation to overcome possible problems [24].

#### 3.4.5. Hypothesis 5 Test Results

There is a positive and significant influence of the PBLL approach on the collaboration of students at Polimedia Kreatif Jakarta with a  $t$ -value =  $19.14 > 2.58$  and a regression equation:  $\text{relevance} = 0.93 * \text{PBLL} + 0.04$ ,  $R^2 = 0.87$ . From the regression equation, it can be predicted from the regression weight value that if the application of PBLL is increased by 1%, the relevance of the learning objectives will increase by 93%. The error value of 0.04 proves that the PBLL cannot explain the relevance of the learning objectives by 4%, but the R-square value of 0.87 proves that the PBLL can explain the relevance of the learning objectives by 87%. The results of the study on this one latent variable still strengthen the research results [23]: the treatment in the experimental group can improve students' writing skills which can significantly increase accuracy, fluency, and reduce complexity, make it easier to compose sentence structures, grammar and, increase vocabulary mastery.

## 4. Conclusions

### 4.1. Instrument Development and Psychometrics

A 32-item scale was calibrated to measure students' attitudes toward the Publipreneur-Based Language Learning (PBLL) approach. All items demonstrated strong convergent validity ( $\text{AVE} = 0.86 > 0.50$ ) and

internal consistency (Composite Reliability = 0.99 > 0.70), confirming the instrument's suitability for subsequent structural analysis.

#### 4.2. Model adequacy

The second-order SEM achieved an excellent global fit (RMSEA < 0.05; RMR < 0.05; CFI, TLI/NNFI, NFI, IFI > 0.95; PGFI, PNFI, RFI within recommended thresholds), indicating that the hypothesized PBL construct and its five outcome variables provide a parsimonious yet comprehensive representation of the data (N = 530; statistical power > 0.99).

#### 4.3. Motivational Impact

PBL exerted a large, positive effect on student motivation (standardized  $\beta$  unspecified;  $t = 17.80$ ,  $p < 0.001$ ), underscoring the approach's capacity to enhance learners' enthusiasm, self-efficacy and perseverance in English for Specific Purposes (ESP) courses.

#### 4.4. Technology Adoption

A significant positive path emerged between PBL and students' educational technology use ( $t = 16.99$ ,  $p < 0.001$ ), suggesting that PBL's authentic, project-driven tasks encourage purposeful engagement with digital resources and media platforms.

#### 4.5. Constructive Feedback Loop

The PBL framework was strongly associated with the quality and frequency of constructive lecturer feedback ( $t = 17.56$ ,  $p < 0.001$ ), indicating its effectiveness in fostering dialogic teaching practices that refine student performance in real time.

#### 4.6. Collaborative Competency

PBL positively predicted student collaboration ( $t = 15.63$ ,  $p < 0.001$ ), reflecting its emphasis on teamwork, peer support, and shared problem-solving—all critical skills for creative-media professionals.

#### 4.7. Alignment with the Learning Objectives

The largest effect was observed for perceived relevance to learning goals ( $t = 19.14$ ,  $p < 0.001$ ). PBL projects appear to bridge classroom tasks and industry-aligned competencies, thereby reinforcing learners' sense of purpose and applicability.

Collectively, the evidence positions PBL as a theoretically grounded and empirically validated pedagogy that simultaneously activates motivation, technological fluency, formative feedback cycles, collaborative behaviors, and outcome relevance in an ESP context. Given the near-population sample and robust psychometric properties, these findings carry high internal validity and offer a replicable model for creative-industry higher education worldwide.

## Declarations

#### Author Contributions

Conceptualization, Z, and N.; methodology, Z, and N.G.; software, E.M. and L.J.; validation, Z. and N.; formal analysis, L.J.; investigation, Z, N, and E.M.; resources, Z.; data curation, Z.; writing—original draft preparation, all authors contributed equally; writing—review and editing, Z.; visualization, E.M. and L.J.; supervision, Z.; project administration, Z. All authors have read and agreed to the published version of the manuscript.

#### Data Availability Statement

The data presented in this study are available on request from the corresponding author.

#### Funding

Funding information is not available.

#### Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and was approved by the Review Committee of Research Center of the Politeknik Negeri Media Kreatif Jakarta, Indonesia.

#### Informed Consent Statement

Informed consent was obtained from all the subjects involved in the study.

#### Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

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