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Evaluation of English 9th Curriculum with CIPP Model and Structural Equation Modeling[1]

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ABSTRACT

EF EPI (2018), which is a worldwide research network, published that Turkey ranked 73 among the 88 countries in the English Proficiency Index. This result demonstrated that the expected levels of present English curriculum do not meet the social needs in Turkey. In this respect, it is necessary to evaluate the existing English education curriculums and to reflect the results of these studies to the curriculum development studies. From this perspective, the aim of this study is to evaluate the views of students to the current 9th grade English course curriculum in Turkey according to the CIPP model. Structural equation modeling was used to analyze the dynamic relationships between the dimensions of the CIPP model. Method of the research was survey model. In the study, "English Course Teaching Program Student Evaluation Scale" was used as an instrument to collect data. Totally 434 students attending 9th graders in three public schools were determined for the sample. Results of the research revealed that the direct effect of context on input (r=.93; p<.001); input on process (r=.93; p<.001), and process on product (r=.61; p<.001) was found strong. Also, the direct effect of context on product (r=.39; p<.05) was found weak. Additionally, the indirect effects of context on process (r=.86; p<.001); context on product (r=.53; p<.001) and input on product (r=.57; p<.001) was found moderate.

Keywords: Curriculum Evaluation, CIPP Model, Structural Equation Modeling.

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9.Sınıf İngilizce Öğretim Programının CIPP ve Yapısal Eşitlik Modellemesi Kullanılarak Değerlendirilmesi[1]

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ÖZET

Dünya çapında bir araştırma ağı olan EF EPI (2018), Türkiye'nin İngilizce Yeterlilik Endeksi'nde 88 ülke arasında 73. sırada yer aldığını yayınladı. Bu sonuç, mevcut İngilizce öğrtim programlarının beklenen seviyede Türkiye'deki sosyal ihtiyaçları karşılamadığını göstermiştir. Bu bağlamda, mevcut İngilizce öğretim programlarını değerlendirmek ve bu çalışmaların sonuçlarını program geliştirme çalışmalarına yansıtmak gerekliliğini ortaya çıkmaktadır. Bu açıdan bakıldığında, bu çalışmanın amacı, öğrencilerin mevcut 9. sınıf İngilizce dersi müfredatına ilişkin görüşlerini BGSÜ (Bağlam-Girdi-Süreç-Ürün) modeline göre değerlendirmektir. Araştırmanın yöntemi anket modelidir. BGSÜ modelinin boyutları arasındaki dinamik ilişkileri analiz etmek için yapısal eşitlik modellemesi kullanılmıştır. Araştırmada veri toplama aracı olarak "İngilizce Dersi Öğretim Programı Öğrenci Değerlendirme Ölçeği" kullanılmıştır. Üç devlet okuluna devam eden toplam 434 dokuzuncu sınıf öğrencisi çalışma grubu olarak belirlenmiştir. Araştırmanın sonuçları bağlamın boyutunun girdi boyutu üzerindeki doğrudan etkisinin (r = .93; p <.001); işlem boyutunun girdi boyutu üzerindeki doğrudan etkisinin (r = .93; p <.001) ve ürün boyutunun işlem boyutu üzerindeki doğrudan etkisinin (r = .61; p <.001) güçlü düzeyde olduğu bulunmuştur. Ayrıca, bağlam boyutunun ürün boyutu üzerindeki doğrudan etkisi (r = .39; p <.05) zayıf düzeyde olduğu bulunmuştur. Ek olarak, bağlam boyutunun süreç boyutu üzerindeki dolaylı etkileri (r = .86; p <.001); ürün boyutunun bağlam boyutu üzerinde (r = .53; p <.001) ve ürün boyutunun girdi boyutu üzerindeki etkisinin (r = .57; p <.001) orta düzeyde olduğu bulunmuştur.

Anahtar Kelimeler: Program Değerlendirme, CIPP Model. Yapısal Eşitlik Modelleme

1. Introduction

English is one of the common languages used all over the world and is spoken by 1.5 billion of the world's 7.5 billion population, but only 360 million of them are native speakers of English (Crystal, 2012). Whereat, the proportion of non-native speakers of English is higher than that of native speakers. According to the research conducted by EF EPI (2018) on non-native speakers of English, had published that Turkey ranked 73 among the 88 countries in the English Proficiency Index. In this respect, the current English curriculum in Turkey requires significant changes with the light of curriculum evaluation studies.

The effectiveness of the curriculum is based on information gathered by curriculum evaluation models. For the reason that any information received in line with the curriculum evaluation models helps decision makers to determine the idle aspects of the curriculum and also, this contributes to improving the effectiveness of the curriculum. Although there are various curriculum evaluation models such as Tyler's objective model, Kirkpatrick's four-level evaluation model, Stake's responsive model, Scriven's goal free model, CIPP model.

In the literature, the CIPP (Context-Input, Process-Product) model developed by Stufflebeam (1971) is widely used in many studies as a management-based curriculum evaluation approaches (Asfaroh, Rosana & Supahar, 2017; Karataş & Fer, 2009; Özüdoğru, 2018). The CIPP curriculum evaluation model consists of four dimensions including context, input, process, and product evaluations that provide a comprehensive framework for guiding the evaluation of curriculums, products, and systems (Stufflebeam, 1983; Stufflebeam & Shinkfield, 2007).

1.1. CIPP Currıculum Evaluation Model

The CIPP model is a decision-oriented model that systematically collects information about a curriculum to identify strengths and limitations in content or delivery, to improve program effectiveness or plan for the future of a program. The CIPP curriculum evaluation model consist of four dimension including context, input, process, and product. The core values of CIPP curriculum evaluation model are shown in Figüre 1. The core value of context is about goals or mission. Overarching goals, exploring background information and cultural context are all components of this stage. The core value of input component is about plans and resources such as identifying the key stakeholders and examining the program budget. This component also collects information about planning and strategies for implementation including human resources and timeline. The core value of process component is about actions and components. The third component includes the activities of the program which are assessed with the focus on continuous improvement. The last component product is about outcomes or objectives that measure the outcomes of the program and how effectively those outcomes are being addressed (Stufflebeam, 2003).
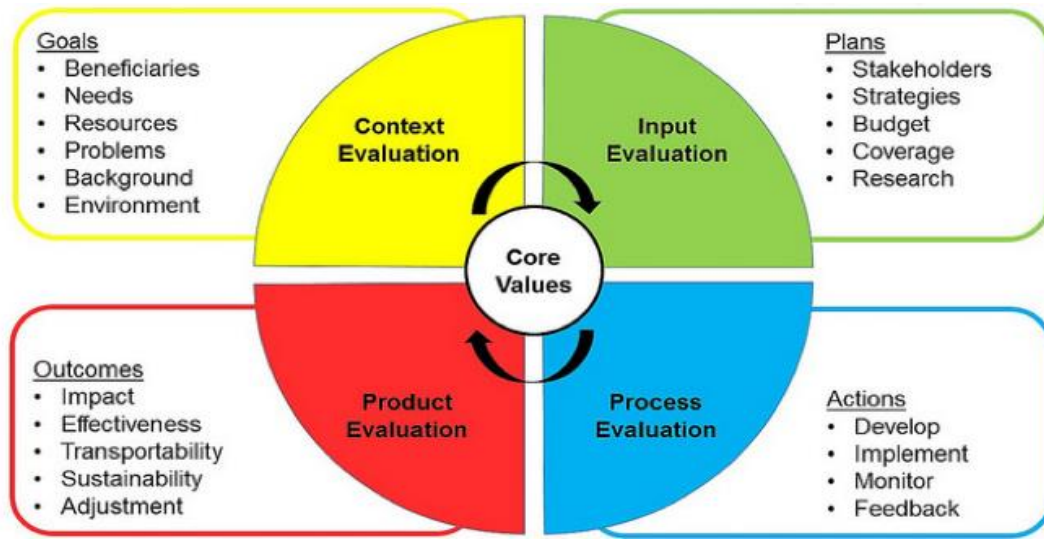
Source: Stufflebeam, D. (2003). The CIPP model of evaluation. In T. Kellaghan, D. Stufflebeam & L. Wingate (Eds.), Springer international handbooks of education: International handbook of educational evaluation.

Figure 1. The core values of the CIPP evaluation model

In the current literature, many studies using the CIPP curriculum evaluation model are designed by qualitative methods, (Darama, Karaduman, Kahraman & Gündoğdu, 2018; Yaman Akkuzu & Sen, 2017) quantitative methods (Aktı Aslan & İzci, 2017; Karataş & Fer, 2009; Kavgaoglu & Alcı, 2016; Kaya & Ok, 2016); or mixed methods (Dehkordi & Talebinezhad, 2018; Kurt, 2017; Öner & Mede, 2015; Özüdoğru, 2017; Rezaei, 2016; Ulum, 2016). All of these studies shown that the curriculum evaluation studies generally consist of frequency and percentage calculations, which are used to determine the status of the current curriculums (Özüdoğru, 2018). However, the aim and interest in a curriculum evaluation should be to carry out more informative studies that will explain the effectiveness of the curriculum and its processes in order to achieve desired goals by revealing the causal relationships between the processes of the curriculum (Sidani & Sechrest, 1999; 227).

In this context, this study aims to take students' opinions about the current 9th grade English curriculum in terms of four dimensions of the CIPP curriculum evaluation model and to investigate the relationships between the dimensions in the CIPP model. In light of these objectives, the following sub-problems were determined:

1. What are the direct effects between the sub-dimensions of the CIPP model, context, input, process and product?

2. What are the indirect effects between the sub-dimensions of the CIPP model, context, input, process and product?

2. Method

Descriptive survey method was used to collect students' opinions about the 9th grade English course curriculum. Structural Equation Modeling (SEM) was used to examine the relationship between the relevant dimensions of the CIPP model. The measurement and structural model were defined by AMOS 21.0 statistical package program. The variables; context, input, process, and product were labeled as a latent variable. Similarly, items were labeled as indicators in the statistical package program. Lastly, the results obtained from the analysis were interpreted.

2.1. Study Group

The sample of the study consisted of 434 middle school 9th grade students determined by purposive sampling method. Descriptive statistics of the participants were presented in Table 1.

Table1
Demographic Characteristics of Students

Independent Variables		*f*	%
Gender	Female	219	50.5
	Male	215	49.5
Type of School	Anatolian High School	98	22.6
	Science High School	97	22.4
	Vocational High School	239	55.1
	Total	434	100

Table 1 indicated that half of the participants were female (50.5%) and the other half were male (49.5%). The students participating in the study were attending Science High School (22.6%), Anatolian High School (22.4%) and Vocational High School (55.1%).

2.2. Instrument

"The CIPP questionnaire" was used as an instrument that aim to evaluate the English course curriculum of "Yıldız Technical Uiversity Modern Languages Department curriculum" according to the CIPP curriculum evaluation model. Instrument was developed by Karataş and Fer (2011) and consists of 46 items and four factor such as context (10-item), input (6-item), process (8-item), and product (22-item). The validity and reliability studies of the original instrument were conducted on higher education students. Within the scope of this research, the study group consisted of secondary school students. Therefore, Confirmatory Factor Analysis (CFA) was conducted to the original measurement tool to determine the consistency of "CIPP questionnaire" to the collected data from secondary school students. The CFA model of the original measuring instrument, which consists of 46 items, was referred as Model-1, and the CFA model, which consists of 24 items after the recommended modifications conducted, was referred as Model-2.
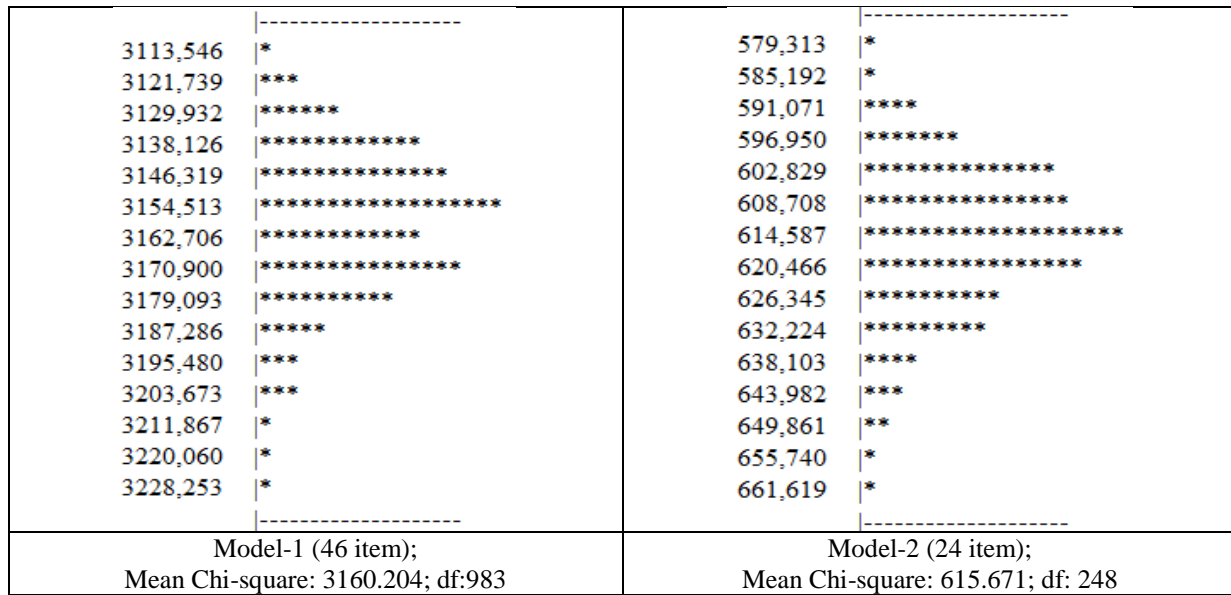
Model-1 (46 item);	Model-2 (24 item);
Mean Chi-square: 3160.204; df:983	Mean Chi-square: 615.671; df: 248

Figure2. Chi-square distributions of models analyzed by bootstrap method (n = 500)

Figure 2 shows that the distribution of the chi-square values of random samples (n = 500) generated by the bootstrap sampling method yields a normal distribution for Model2. The goodness-of-fit statistics for both Model-1 and Model-2 are given in Table 2.

Table2

The Goodness-of-Fit Statistics for Both Model-1 and Model-2

	Chi-square	df	SRMR	GFI	CFI	NFI	TLI	RMSEA
Model-1	3012.645	983	0.05	0.74	0.85	0.79	0.84	0.07
Model-2	543,197	248	0.04	0.91	0.95	0.91	0.94	0.05
Faklar	Δ(2471.598)	Δ(737)	Δ(0.01)	Δ(0.17)	Δ(0.10)	Δ(0.12)	Δ(0.10)	Δ(0.02)

A comparison between both models in terms of the goodness-of-fit statistics reveals that Model-2 has better statistics than Model-1. Especially, the GFI (Goodness of Fit Index), CFI (Comparative Fit Index), NFI (Normed Fit Index) and TLI (Tucker-Lewis Fit Index) values were found to be below the desired critical value of .90 (Browne & Cudeck, 1993; Hooper, Couglan & Mullen, 2008; Byrne, 2010). Similarly, SRMR (Standardized Root Mean Square Residual) and RMSEA (Root Mean Square Error of Approximation) values of Model-2 was found below the desired cutoff value of .05. A total of 22 items were eliminated from the original form of the survey in terms of similarity, inclusiveness, and level of conformity following modifications related to the disturbance terms proposed by the statistical package program. As a result, reliability levels, the number of items and the relevant sub-dimensions that were associated with the new form of the English Curriculum Student Evaluation Questionnaire (Model 2) are given in Table 3.

**Table3**

Distribution of Survey Items According to CIPP Model

Dimensions	Number of items		İtems	Cronbach Alpha		
	Model-1	Model-2		Original	Model1	Model2
Context	10	6	1[a], 3, 9, 10, 11, 12, 13[a], 14[a], 15, 16[a]	.81	0.90	0.83
Input	6	4	17, 18[a], 19, 20, 21[a], 22	.87	0.88	0.82
Process	8	5	25, 26[a], 27, 28[a], 29, 30, 32[a], 33	.92	0.89	0.82
Product	22	9	2, 4[a], 5[a], 6, 7[a], 8[a], 23[a], 24, 31, 34[a], 35[a], 36, 37, 38, 39[a], 40[a], 41[a], 42[a], 43[a], 44, 45[a], 46	.94	0.96	0.90
Total	46	24		0.95	0.98	0.95

a Items extracted from the instrument

2.3. Analysis

To reveal the direct and indirect effects between context, input, process, and product in line with the research problems, the designed structural model was formed by referring to the conceptual

relationships specified by Onyefulu (2001). When the mentioned conceptual relations are examined in the Figure 3; the context dimension affects both input and process dimensions; similarly, the input dimension affects both process and product sub-dimensions; lastly, the product dimension affects context dimension.
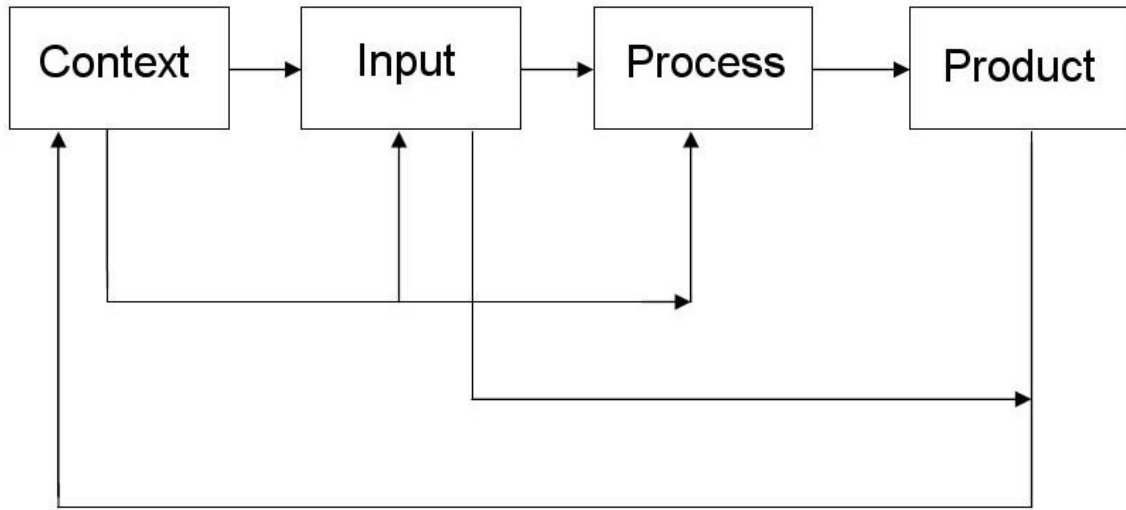
Source: Onyefulu, C. N. (2001). An evaluation study of the business education programs in the university of technology in Jamaica. *Unpublished Doctoral Thesis, University of Alberta, Canada*.

Figure3. Relationships between dimensions of CIPP evaluation model

During the analysis process, the effects that were found significant were kept in the model. Afterwards, modifications that were suggested by the statistical program were done to achieve a saturated model. Lastly, the final version of the Latent Variable Model of the English Curriculum Student Assessment Questionnaire is shown in Figure 4.

The "maximum likelihood" estimation method was used to predict the regression relationships between the sub-factors of the CIPP model. In addition, the critical ratio of the estimated parameters representing the parameter estimate divided by the standard error was taken as ± 1.96 (p <.05).

3. Findings

Descriptive statistics of the students' views on the 9th grade English curriculum in terms of CIPP model sub-dimensions are given in Table 4.

Table4.

Descriptive statistics of CIPP model

CIPP model subfactors	N	Mean	Std.
Context	434	3.36	.95
Input	434	3.38	1.03
Process	434	3.40	1,00
Product	434	3.22	.95

When the students' views on the dimensions of the CIPP model were examined, it was seen that the process dimension had the highest mean (M = 3.40) and the product dimension had the lowest mean (M = 3.22).

3.1. Structural Model of the CIPP Evaluation Model

The structural model and the regression weights (see Figure 3) of the 9th grade students' views about the English curriculum according to the CIPP model sub-factors are shown in Figure 4. All parameters in the model were significant at p <, 001 level. The goodness-of-fit statistics (SRMR, GFI, CFI, NFI, TLI and RMSEA) of the Model 2 are given previously in Table 2.

3.2. Direct Effects in the Structural Model

Within the scope of the first research problem, the regression weights of the direct effects between context, input, process, and product, which constitute the sub-dimensions of the CIPP model, are given in Table 5.

Table5.

Regression weights for direct effects between context, input, process and product

Direct effects	B (SE)	β
Context => Input	1.15 (,09)	.93*
Input => Process	.81 (,06)	.93*
Process => Product	.60 (,09)	.61*
Context => Product	.41 (,09)	.39*

*p<.01

As can be seen from the Figure 3, the direct effect of context on input (r=.93; p<.001); input on process (r=.93; p<.001) and process on product (r=.61; p<.001) was found remarkably strong. Also, the direct effect of context on product (r=.39; p<.01) was found moderate. In addition, no direct effects of context on process and input on product were found in the model.
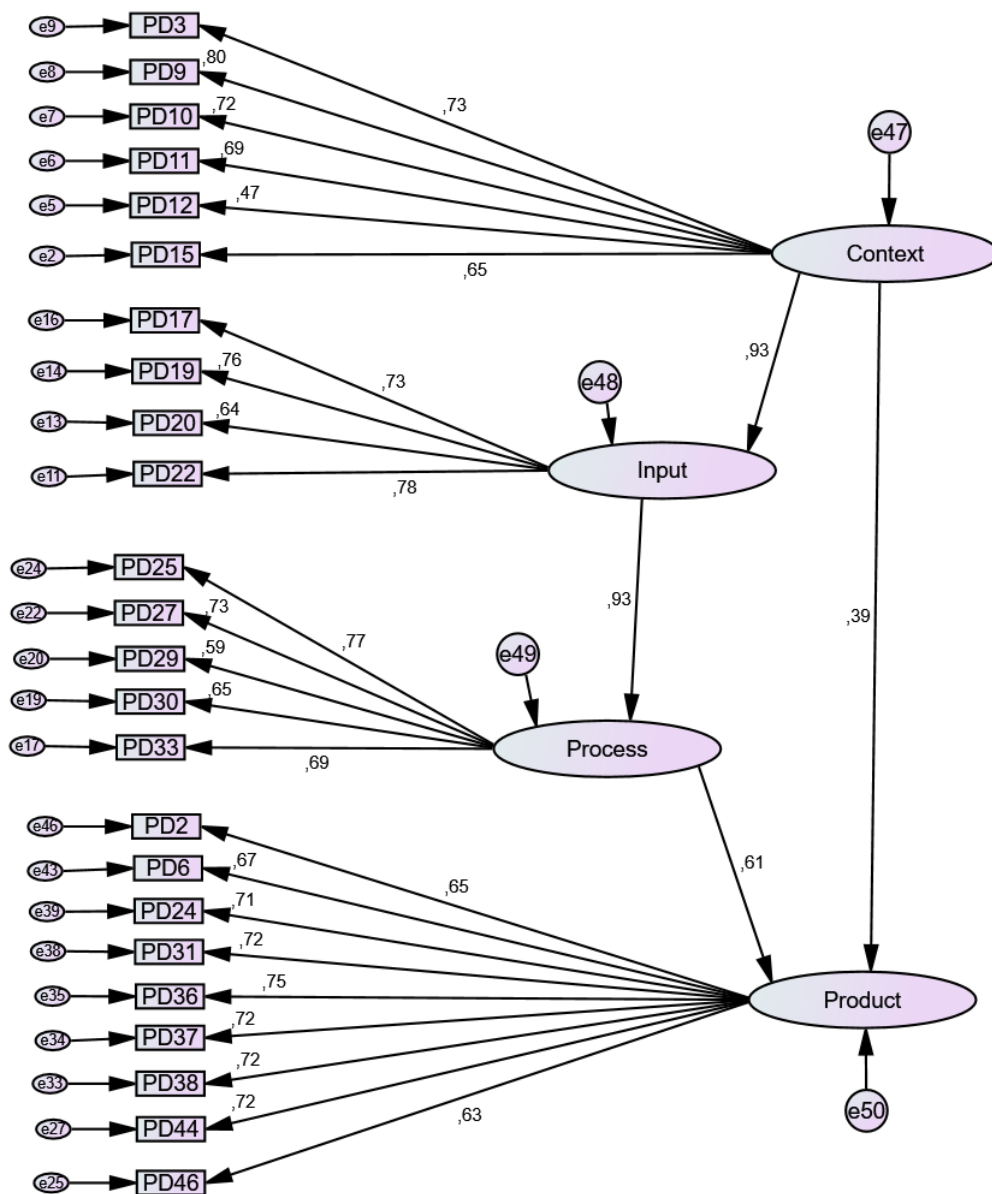

Figure 4. Structural equation model of CIPP model

3.3. Indirect effects in the Structural Model

Within the scope of the second research problem, the regression weights of indirect effects between context, input, process, and product, which constitute the sub-dimensions of the CIPP model, are given in Table 6.

Table6.
Regression weights for indirect effects between context, input, process and product

Indirect effects	B (SE)	β
Context => Input => Process	.93(,02)	.86*
Input => Process => Product	.49(,10)	.57*
Context => Input => Process => Product	.56ª(,09)	.53*

*p<.01

As shown in Table 6, the indirect effects of context on process (r=.86; p<.001); context on product (r=.53; p<.001) and input on product (r=.57; p<.001) was found strong.

4. Conclusion

Within the scope of the research, the evaluation of the 9th grade English Curriculum has been made according to Stufflebeam's CIPP model. The focal point of this model is the decision-makers' decisions about the curriculum. In this respect, the findings of the research were interpreted by taking into consideration the CIPP model in the context of the students' perceptions about the decision-makers. The findings of the research indicated that the direct effect of context on input; input on process and process on product was found strong. Also, the direct effect of context on product was found moderate. There are studies with similar results in the literature. For instance, Kavgaoğlu & Alcı (2016) found a strong positive correlation between the components of the CIPP model. Similarly, Aslan & Uygun (2019) found a moderate significant correlation between the scale components.

First of all, the direct strong effect of context on the input can mean as students may think that the objectives and priorities set by the decision-makers in the 9th grade English curriculum were clearly described. Also, students may think that plans are prepared regarding learning objectives and learning settings. The direct strong effect of input on the process can mean as students may consider that resources, materials, personnel, and strategies used in the current curriculum have been found strongly important for turning plans into activities. The direct moderate effect of the process on the product can mean as students may think that the decision-makers did not implement enough change in the current curriculum in terms of the transformation of activities into behavior in the English course. The weak direct effect of context on product can mean as students may think that the objectives set by decision-makers in the 9th grade English curriculum have been coincided weakly with short- or long-term products such as knowledge, skills, and habits gained at the end of the course.

Secondly, indirect effects of context on process can mean that students have a positive strong perception of the transformation of the goals set by the administrators into classroom activities in line with the plans. Indirect effects of input on product can mean that students have a medium level perception about the transformation of the plans determined by the administrators into products through classroom activities. Indirect effects of context on product can mean that students have a medium level perception about the plans determined by the administrators and the transformation of the activities determined according to these plans into products.

According to the findings of the analysis of latent variables designed according to the CIPP curriculum evaluation model; it has been found that the context and input dimension had no effect on the process dimension. The main reason for this may be that the students think that the goals set by the decision-makers and the plans created to achieve these goals do not turn into short and long term results.

Besides these results, Stufflebeam did not define the relationships among the dimensions of the CIPP model, so that, these results may be evidence of the existence of a dynamic interaction among the dimensions in the CIPP model.

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