

**THE TRUTH THEORY AND DETERMINANT CONTINGENT FACTORS FOR TEACHING
IMPLEMENTATION FOR COURSE OF INTEGRATED REPORTING SYSTEM <IR> : A
SYSTEMATIC LITERATURE REVIEW**

Syaiful Hifni 1); Akhmad Sayudi 2); A. Kadir 3); Rano Wijaya 4)

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1,2,3,4) Faculty of Economics and Business ULM

Corresponding Author: syaiful.hifni@ulm.ac.id

Abstract

The aim of this study was to examine the role of information knowledge from truth theory and contingency theory for the implementation of teaching <IR> integrated reporting course in the accounting department. This study uses a quantitative systematic literature review, by reviewing 100 articles related to the theme of accounting education and education, as well as the <IR> theme. Using C Square and C-Contingency by scoring a nominal value scale for each indicator item being measured. The findings of the first study, revealed the role of information knowledge of coherence, correspondence, pragmatic, convergence, semantic, and contingency theories in differentiating the implementation of the process and teaching objectives of the relevant <IR> course design. Second, it showed a relationship between truth theory and contingency theory in alignment for the implementation of <IR> course design, with a C contingency coefficient of 0.4828. Although it has not been supported by regulatory provisions to require the teaching of <IR> courses to be integrated as part of the accounting curriculum. However, there is an implementation perspective for this global <IR> norm in the form of courses and for its teaching implementation. Provide implications for the legitimacy of the role of academics in achieving global competence for graduates of accounting education. The novelty of the research relates to this research information which implies insight in explaining the contingency role of <IR> courses. In the implementation of <IR> teaching in the accounting department, which can be in accordance with the accounting education curriculum, to be implemented, including for Indonesia where this research is conducted.

Keywords: truth theory, contingency theory, teaching implementation, integrated reporting system course, accounting curriculum

Introduction

The implementation of the objectives of the International Integrated Reporting Framework <IIRF> in the momentum strategy phase (2018-2020), for implementation towards <IRF> (IIRC, 2013b, 2013a, 2018a, 2020, 2021), requires the role of each IIRC stakeholder. In accordance with this momentum, efforts to implement global norms <IRF> should be implemented since 2020 through the involvement of global reporting entities (EYGM, 2014). The global challenge in implementing integrated reporting <IR> requires the involvement of academics as a stakeholder group IIRC with its role in investigating and refining the theoretical basis for the implementation of <IR>. Being exist of special engagement mechanism from academic stakeholders (IIRC, 2018a, 2020). Through material exploration and design for new courses with <IR> within the accounting education curriculum. Currently, it is important to continue and maintain the role of academic stakeholders, namely the accounting profession (Tilta et al., 2018) by giving interest to implement <IR> through teaching implementation.

The teaching implementation of <IR> courses is driven by the basic needs of development in the field of accounting education. With fulfillment for the hybrid syllabus in curriculum development in accordance with the digitalization era (Kharba & Muqattash, 2020). As well as for importance of curriculum development to fulfill the needs of contemporary stakeholders (Woodside et al., 2020). Implementation of <IR> courses as curriculum alignment with the demands of meeting global norms for the <IRF> reporting system, which is directed at increasing global competence in accounting (AICPA, 2018; Borgonovo et al., 2019; Conrad, 2019; IAESB, 2014; IFAC, 2017) towards sustainable development (IIRC, 2018b, 2020; United Nation, 2017).

Normatively, the implementation of <IR> courses requires implementation theory (Nilsen, 2020). In diagnosing and evaluating educational policy, regulation, and organizational construction in the education and development environment (Cerna, 2013; Fullan, 2007, 2009; Payne, 2008). Implementation theory and implementation requirements are needed to fulfill course designs that can answer the question of achieving learning objectives due to environmental changes (Abbasi, 2013; Astin, 2012).

As the implementation of the role of academics, the implementation of <IR> course design in the process must be carried out scientifically. With the role of information knowledge that contributes to knowing and explaining a level of practice (Du Rietz, 2018). Through the informational role of truth theory, it gives us insight into the structure of our practical ability to understand reality (Bitar et al., 2018; Custers, 2019; Ludwig, 2000; Shuttleworth, 2008). Because with the role of theory, it helps us understand and improve our world (Rankin et al., 2012). And, as the implementation of technology for the teaching field, it is important to fulfill its relevance according to the context of contingency theory (Beath et al., 2013; Cariveau et al., 2020; Donaldson, 2001; Morton & Hu, 2008). Applying the theory of truth and contingency theory are required at the level of theoretical analysis at the grand/macro level, middle range/mesa level, and application/micro theory level (Hassan & Lowry, 2015; Klein & Kozlowski, 2000; Serpa & Ferreira, 2019).

Based on the reasons above, this research can generally be carried out by referring to implementation theories for policy implementation (Cerna, 2013; Fullan, 2007, 2009;

Nilsen, 2020; Payne, 2008). With the role of knowledge information (Du Rietz, 2018) from the truth theory (Custers, 2019; Ludwig, 2000; Shuttleworth, 2008; Walker, R., & Dell, 2008), and with contingency theory (Van de Ven et al., 2013). As a relevant approach and qualified scientific procedures in the teaching implementation and establishment of <IR> course design.

Several studies with the theme of education, accounting education, and the theme of integrated reporting <IR>, has been carried out (Owen, 2013). Facts with suggestions that the management accounting curriculum should be updated with the integrated reporting course (Oyewo et al., 2015). Facts of aspects of intellectual capital are studied in universities (Bisogno et al., 2018). The level of knowledge about <IR> in Indonesia is still low. <IR> may also have to be introduced into the accounting curriculum at universities (Adhariani & De Villiers, 2018). While leading global professional accounting bodies (eg, ACCA & CIMA) have fully incorporated integrated reporting principles into their curricula at the professional level (Ibiamke & Ajekwe, 2020). Facts, related to policy makers and regulators who have the benefit of implementing voluntary <IR> in universities (Adhikariparajuli et al., 2020).

This research was conducted related to problems and efforts to fulfill the role of higher education academics through the implementation of <IR> courses (IIRC, 2018b, 2020). Where from several previous studies provide the basis for the importance of integrated reporting <IR> as an education policy, which prioritizes <IR> courses as part of the accounting curriculum. However, the research presented has not provided empirical facts regarding the role of truth theory and contingency theory in the context of implementing <IR> course teaching in the perspective of the accounting curriculum. This research was proposed using the concept of knowledge of information (Du Rietz, 2018) from the theory of truth and contingency, which the source of information was taken from the articles reviewed (Palmatier et al., 2018; Paré et al., 2015). The main research questions that will be answered in this study are: (i) Is there a difference in the application of <IR> course design with the role of truth theory (coherence, correspondence, pragmatic, convergence, semantics) and the role of contingency theory, (ii) How is the relationship between the application of <IR> course design with the role of truth theory (coherence, correspondence, pragmatic, convergence, semantic) and the role of contingency theory.

The results of this study are expected to be a contribution to development insights for the intended stakeholders. First, for academics and universities as entities which providing accounting education in the context of teaching <IR> courses, which are part of the accounting curriculum. Second, for other stakeholders in the field of education and curriculum development, in fulfilling their involvement in accordance with the normative role given, in line with the fulfillment of the global norm <IR>.

Theoretical aspects and hypothesis development

Theoretical Aspects

Theoretically, the context of implementing theories (Cerna, 2013; Fullan, 2007; Nilsen, 2020; Payne, 2008) was needed for the <IR> course design, can be explained by addressing the basic problem of practice, policy, and theory (Clements, 2007). Also need referring to the learning theory of behaviorism, cognitivism and constructivism (Fulbrook, 2019). With fulfill the existence of courses in curriculum relevance according to the

context of environmental change (Kotter, 2012; Ornstein & Hunkins, 2009; Taib et al., 2017). It can be view that the existence of the implementation of courses through design improvement, as a representation of the function and role of OBE with constructive alignment (Biggs, 2014; Rhaffor et al., 2017). The delivery of important courses meets the alignment with the curriculum context, is student-centred and is based on competence goals.

The teaching implementation of new courses <IR> in the accounting curriculum, requires a management approach in the accounting teaching curriculum, related to the teaching of accounting courses as a requirement for practical experience, competence and accounting professionalism (Owen, 2013). Substantively, the placement of <IR> courses provides normative and functional reasons. There are benefits of teaching <IR> which oriented from internal management information in business processes of the organization, towards an external reporting base. As a representation of teaching, existing courses are taught, referring to the triple bottom line principle (Elkington, 1998). Therefore, the implementation of <IR> course learning requires the achievement of competency learning outcomes, feedback for improvement of <IR> design, and to meet a fit and adaptive design, to the dynamics of the external environment (Abbasi, 2013; Astin, 2012). The implementation of teaching <IR> courses is required by adjusting and fulfilling the design characteristics of <IR> courses, in the context of the existing curriculum. Requires redesign of inputs to be converted into outputs into the capstone design (Eppes & Milanovic, 2011; Pembridge & Paretto, 2019; Schritter, 2021). The implementation of the <IR> course includes learning content related to the need for implementing strategic, administrative, social, and technical substances with the context and content of the international integrated reporting framework (IIRF) (2013a, 2013b). Then, comply with the latest developments related to the needs and challenges of the post-COVID-19 market which has a global impact (IIRC, 2020, 2021).

The teaching implementation of the <IR> course, its implementation requires an explanatory tool from the role of theory application. The theory of truth has a close relationship with other interesting concepts, which are important to apply to understanding what truth is (Lynch, 2001). According to the context, absolute truth cannot be obtained (Shuttleworth, 2008). However, that truth claim, however, requires a relevant approach, which we can use to ensure that what we find is true, reliable, and valid. The truth is also related to knowledge (Lynch, 2001). Therefore, claiming scientific status to increase the credibility of truth claims will be related to relevant scientific status that can be accounted for (Potter, 2002). Due to the not all theories of truth are meant to answer the same question (Kirkham, 1992). So it is necessary to reveal the role of the theory of truth in various types of theory of truth (Bitar et al., 2017; Custers, 2019; Haig & Borsboom, 2012; Thunnissen et al., 2013).

Designing a new course for <IR> is a contingency part of its implementation. The implementation of the <IR> course as a technology in accounting learning is applied with a contingency perspective. Referring to the the role of contingency theory that provides a perspective on how the scope of this theory's role in system implementation (Rankin et al., 2012). The contingency perspective with the level of implementation of <IR> in the organizational context is explained by the central proposition of contingency theory, where organizational performance depends on the fit between context and organizational structure (Donaldson, 2001; Gordon et al., 2009; Morton & Hu, 2008). The role of contingency theory is related to the experimental analysis of human behavior in

response to phenomena (Cariveau et al., 2020). The role of contingency theory in the context of organizational development for management implementation systems, it can be fulfilled through several forms of roles within management (Van de Ven et al., 2013).

Hypothesis Development

The research hypothesis that is built refers to the role of truth theory and the role of contingency theory in explaining the phenomenon of implementing <IR> course learning. Based on the relationship between theory and truth in the essence of science, it can determine when a theory is accepted as reality (Rasmussen, 2013; Shuttleworth, 2008). A scientific theory is closer to the truth if it increases the coherence of its explanation on many phenomena, and deepens it by investigating layers of mechanisms (Thagard, 2007). Based on the role of contingency in the context of management (Van de Ven et al., 2013), with human behavior related to environmental phenomena (Cariveau et al., 2020). The facts of several factual truth theories are evaluated by contingency logic tables, although they are not perfect, their truth suitability remains the best theory (Raynaud, 2019). There is a fact that theory acts as an antecedent and as a consequence of <IR> implementation (Ara & Harani, 2020).

Several studies related to truth theory and contingency theory in the perspective of education and integrated reporting <IR>, among others, became the basis for determining research hypotheses. First, being facts from the role of coherence truth theory (Magnaghi & Aprile, 2014). Second, the role of truth correspondence theory (Atkins et al., 2015; Cooray et al., 2017; Kvernbekk, 2007). Third, there are the role of pragmatic truth theory (Beck et al., 2017; Hifni et al., 2021; Ormerod, 2020). Fourth, for the role of convergence truth theory (Akbar et al., 2017; Tjahjadi et al., 2020). Fifth, the theory of semantic truth (Badici & Ludwig, 2007; Clark, 2007). Sixth, there are some facts of role contingency theory (Radford, 2008; Rodrigues & Morais, 2021; Thagard, 2007). This proposition of contingency is also explained by research previously (Altarawneh & Al-Halalmeh, 2020; Barth et al., 2017; Iacuzzi et al., 2020; Melloni et al., 2017).

Based on all these points of view, and with several previous studies that have not concluded in explaining the relationship between the theory of truth and contingency theory on the teaching implementation of <IR> course, we thereby propose 2 (two) following hypotheses, namely:

H01: There are no difference in teaching implementation of the <IR> course due to the role of truth theory (coherence, correspondence, pragmatic, convergence, semantic), and the role of contingency theory.

H02: There are no relationship towards teaching implementation of the <IR> course due to the role of truth theory (coherence, correspondence, pragmatic, convergence, semantic), and the role of contingency theory.

Research Methods

This research is a systematic literature review (Sneyder, 2019). Using 100 articles as review articles, which were classified into 50 articles on education and/or accounting education research themes, and 50 articles with <IR> research themes.

Stages of Systematic Literature Review

In accordance with this research method, the systematic literature review used, and operational steps are applied in the systematic review of the articles reviewed. In the first stage, as a systematic review structure, includes reference steps on the introductory aspect that presents the problem, and certain problems discussed in the article, which

are reviewed according to education theme, accounting education theme, and <IR> theme of the articles reviewed. In the second stage, it includes the fulfillment of systematic review steps, which consist of: (i) Reviewing the article according to the information required from the content of the article, (ii) Formulating research questions with questions that can be answered with the information contained in the article, (iii) Evaluation of the quality of information during the review process of each article, with the synthesis and interpretation of the results (Gulpinar & Guclu, 2013).

Variable and Indicators and Measurement

Table 1

Variables with indicators and items of indicator

Variables with indicators	Operational definition of variables with items of indicator
Independent variables:	
Role of truth theory	Information knowledge of grand theory, middle range theory, application theory, research proposition statement, conceptual framework (Custers, 2019; Lynch, 2001; Stanford Encyclopedia of Philosophy (SEP), 2018).
Coherence truth theory (CohTT)	
Correspondence truth theory (CorTT)	Information knowledge of facts from the conceptual framework, facts from hypotheses, subject to object relations, predicate relations with objects, and facts related to practice (Custers, 2019; Haig & Borsboom, 2012; Lynch, 2001; Stanford Encyclopedia of Philosophy (SEP), 2015; Thunnissen et al., 2013).
Pragmatic truth theory (PraTT)	Information knowledge of voluntary/mandatory involvement, benefits of practice, actionable role of conceptual framework, evidence in practice of research, inquiry as an experiential process (Kelly & Cordeiro, 2020; Lynch, 2001; Stanford Encyclopedia of Philosophy (SEP), 2021)
Convergence truth theory (ConTT)	Information knowledge of role of stakeholders, coordination between stakeholders, the role of standard setters, collective decisions for group decision making, lobbying by professional bodies (Kelly & Glymour, 1989; Liszka, 2019; Potter et al., 2013; Roco, 2016).
Semantic truth theory (SemTT)	Information knowledge of sentential for reference, sentential predicate of proposition, sentential predicate of content, sentential predicate of context, sentential of being context of evaluation process (Dupre, 2020; Kolbel, 2008; Lynch, 2001; Pagin, 2016; Speaks, 2019).
Role of contingency theory (RoCT)	Information related to the role of <IR> course design in the accounting curriculum, as measured by role contingency, as configuration, as complementary, as suppressing complexity, as creative design, as diversity of performance (Van de Ven et al., 2013)
Variabel dependent	
Teaching implementation of <IR> course (TiIRC)	Information knowledge related to the fulfillment and completion of implementation theories for education policy (Cerna, 2013; Fullan, 2007, 2009; Nilsen, 2020; Payne, 2008), which is measured within input design <IR>, capstone design <IR>, output design <IR>, improvement design <IR>, external environment <IR> (Abbasi, 2013; Astin, 2012; Pembroke & Paretto, 2019).

Source. Adapted From Literary Sources (2021)

Table 1 presents the identification of variables and indicators. Each indicator item is measured using a dummy variable, with a nominal scale. Where for the fulfillment of the information knowledge criteria as an indicator item that is mentioned explicitly and implicitly from each article reviewed, a value of 1 is given, and a value of 0 if the indicator item is not mentioned in the article being reviewed.

The Stages of Data Collection and Data Analysis

Research data collection is carried out by recording data scores for each indicator item from research variables sourced from 100 articles reviewed. Through by: Phase 1: Collecting data from research articles related to the theme of education, accounting education, and the theme of <IR> implementation, in a series of publications of articles from 2003 until year of 2021 (Table 1; Appendix 1.1 and Appendix 1.2). Stage 2: as data analysis activities from direct measurement results for indicator items into the data analysis stage. The data were then analyzed using C square and Contingency tables (Table 8; Table 9). In accordance with the research objectives, the results of the analysis are used to assess the propositions in the statement of the first hypothesis (H01) and the statement of the second hypothesis (H02).

Data analysis

Analysis of research data using the application of non-parametric statistics, with chi-square fit test, and C-contingency (Table 8; Table 9), to test implementation differences, and test the level of relationship between variables (Conover, 1999; Howell, 2011).

Results

This section are consists of presenting the findings in the form of a description of the results of the research with descriptive statistics, the results of the measurement/observation of variables in the indicator items, and the results of hypothesis testing.

Descriptive Findings

Based on the results of the reviewed article, descriptive findings are presented, namely: (i) Description of the types of articles and methods used in article research (Appendix 2), (ii) journal references/proceeding/other source, by year of publication (Appendix 3), (iii) Articles in the context of the entity/subject under study (Appendix 4), (iv) Information knowledge according to the source of information (Appendix 5), (v) There are 100 of articles in geographic contexts (continental/country) (Appendix 6).

Results of the Measurement

Result of Measurement for Independent Variables

Data of research be found through by measurement result of frequency of observation for independent variable, which consist of indicators and items of indicator, presents in figure 2 below.

Figure 2

Result of observation frequency (OF) of independent variables

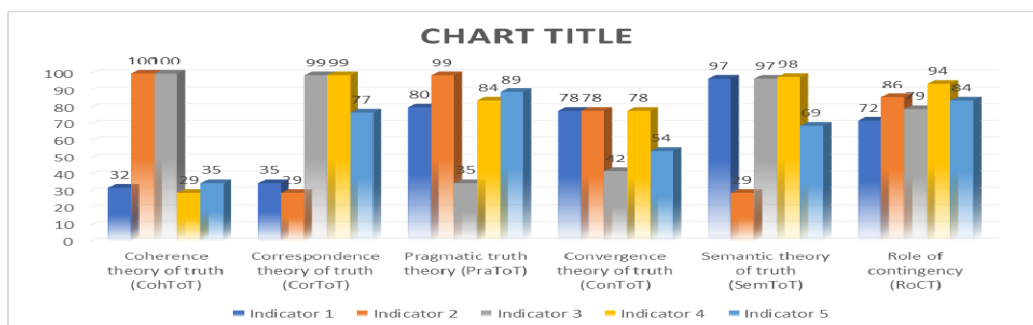


Figure 2 presents the magnitude of each observation frequency for the independent variable research indicator items, from 100 reviewed articles (Table1).

The measurement of the frequency of observation of indicator/indicator items on the independent variables shows the relative value of each according to the information

sources mentioned in the article (Table 5) (Appendix 5). The description of the frequency of observations is represented according to the source of the article with the theme of education and with the theme of integrated reporting.

As states in Table 5, the number of scorekeeping data of the nominal scale in the 5/4/3/2/1 classification was obtained from each reviewed article (Table 6).

Table 6

Scorekeeping of information knowledge and source of information

Information knowledge	Classification	Source of information	
		Education-themed articles	<IR>-themed articles
Coherence of knowledge	5/4/3/2/1	47/48/48/47/47	48/6/6/41/41
Correspondence of knowledge	5/4/3/2/1	47/48/48/47/47	48/6/6/41/41
Pragmatic of knowledge	5/4/3/2/1	47/48/48/47/47	48/6/6/41/41
Convergence of knowledge	5/4/3/2/1	47/48/48/47/47	48/6/6/41/41
Semantic of knowledge	5/4/3/2/1	47/48/48/47/47	48/6/6/41/41
Contingency of knowledge	5/4/3/2/1	47/48/48/47/47	48/6/6/41/41

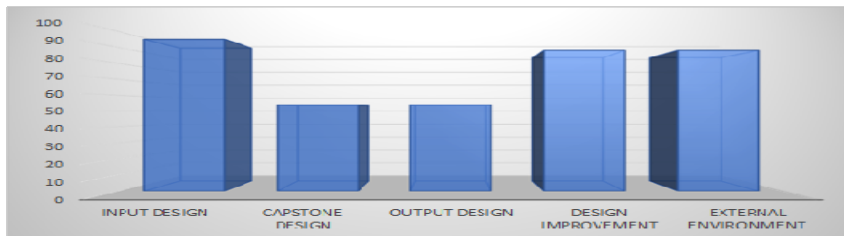
Source. Restated from scorekeeping data for indicators, 2021

Table 6 shows the information knowledge (coherence, correspondence, pragmatic, convergence, semantic) and contingency with scores of 5/4/3/2/1 respectively. With details on the number of outputs information that mentioned in the articles reviewed, from source of articles on education and articles with the theme <IR>. The data from Table 6 used in operational for Table 8, in measuring the values observation frequency (OF) and expected frequency (EF).

Result of measurement for dependent variables

Figure 3

Result of observation frequency (OF) of dependent variable



In Figure 3, shows teaching implementation of <IR> course (TiIRC), as dependent variable that consist of five indicators as characteristics in its implementation. Scorekeeping of information knowledge according to the source of information are presented in table 7 below.

Table 7

Information knowledge according to the source of information

Information knowledge	Source of information knowledge	
	Education-themed articles	<IR>-themed articles
Teaching implementation of <IR> course with indicators: Input design <IR> (95)/ Capstone design <IR> (54)/ Output External environment <IR> (88)	47/ 48/ 48/ 47/ 47	48/ 6/ 6/ 41/ 41
Scorekeeping of information knowledge of teaching implementation of <IR> course (5/ 4/ 3/ 2/ 1)	44/ 2/ 2/ 0/ 0	8/ 39/ 5/ 0/ 0

Source. Restated from scorekeeping data for indicators, 2021

In Table 7, shows the data of frequency observation of dependent variable teaching implementation of <IR>course (TiIRC) from 100 (one hundred) articles reviewed. As well as score-keeping data from 5/4/3/2/1 from each article, sourced from articles with the theme of education and articles with the theme <IR>. These data from Table 7 will be used in the operation of Table 8 (Appendix 7) to measure the value of observation frequency (OF) and expectation frequency (EF).

As states in Table 8 (Appendix 7) shows the achievements of each type of truth theory and contingency theory with a score of 5 and a score of 4. (i) Coherence truth theory (CohTT) provides a relative value of 30%, (ii) CorTT with a relative score of 46%, (iii) Pragmatic truth theory (PraTT) provides a relative value of 73%, (iv) Convergence truth theory (ConTT) gives a relative value of 40%, (v) Semantic truth theory (SemTT) shows a relative value of 78%, (vi) Role of contingency theory (RoCT) has a relative value of 71%. Each type of truth theory and contingency theory have different values in providing an explanation that distinguishes the implementation of teaching <IR> courses in a very implementable and implementable way.

Hypothesis Testing Results

Hypothesis testing for H01 is based on a comparison between the observed frequency (OF) and the expected frequency (EF). Measurement facts showed the frequency of observations with a value of 212.7800 (Appendix 7: Table 8; Appendix 8: Table 9). Then the expected frequency value (EF) is determined by referring to the degrees of freedom of rows and columns (5-1) (7-1), with a significance level of 0.05, which indicates a chi square value of 36.415 in table distribution. Referring to the comparison of the observation frequency of 212.7800 which is greater than χ^2 table 36.415, this means that the hypothesis for H01 can be rejected, with a chi-squared significance value < 0.05 . The results of testing this hypothesis indicate that there are differences in the implementation of the <IR> integrated reporting course because of the role of truth theory and contingency theory. Furthermore, to assess the close relationship between the role of truth theory and contingency theory with the implementation of the <IR> (H02) course, it was assessed after the results of the chi square difference test (H01) were obtained. By calculating the value of the Pearson contingency coefficient ($C = \sqrt{X^2 / (N + X^2)}$), applying the formula for the value of $C = 212.7800 / (700 + 212.7800)$, which shows a coefficient value of 0.4828. The value of this C contingency coefficient can be interpreted with reference to Guilford's empirical rule (Engelbrecht, 2002). The value of C-Contingency is a limited association coefficient between 0 to < 1 , where: 0 = no association/relationship, and 1 = perfect association/relationship. The coefficient value of this study indicated a substantial relationship.

Discussion

In this discussion section, 2 (two) sub-discussions are presented. First, based on the facts of frequency of observation (OF) is greater than the frequency of expectation (EF). The facts of this study are based on the results of measuring indicator items from indicators/variables (Figure 2, Figure 3). Facts of the frequency of observation of indicator items in the design and implementation of <IR> courses are from sources of education-themed articles and <IR>-themed articles (Table 5, Table 6, Table 7). Functionally, this fact shows the role of information knowledge (Du Rietz, 2018) (Table 1) from the context of truth theory and contingency theory (Table 8 and Table 9). The measurement process refers to the completeness of the article being reviewed, from the aspect of research type and method (Table 2), according to the geographical representation of the research

(Figure 1), according to the context of the representativeness of the research time series (Table 3), and according to the context of the research subject of the article being reviewed (Table 4). Facts showed the role of explaining the differences for the process and objectives of the <IR> course design course implementation (Table 10). Second, according to research evidence that shows the relationship between the role of truth theory and the role of contingency theory in relation to the implementation of teaching <IR> course (Table 11).

The truth and contingency theory with teaching implementation <IR>

The following discussion is presented for the role of each type of truth theory and contingency theory in the context of the process and objectives of teaching implementation <IR> course (Table 10).

Table 10

The role of theories in differentiating for teaching implementation <IR> course

Information knowledge ¹⁾	Role for implementation ²⁾
Items indicator of CohTT	Information knowledge of theoretical coherence in differentiating teaching implementation of <IR> course
Items indicator of CohTT	Information knowledge of facts with theories in differentiating teaching implementation of <IR> course
Items indicator of PraTT	Information knowledge of practices benefit in differentiating teaching implementation of <IR> course
Items indicator of ConTT	Information knowledge of convergence in differentiating teaching implementation of <IR> course
Items indicator of SemTT	Information knowledge from language aspect in differentiating teaching implementation of <IR> course
Items indicator of RoCT	Information knowledge for role contingently of <IR> course in differentiating teaching implementation <IR> within accounting curriculum

¹⁾ Align with items of indicators (Table 1); ²⁾ Align with operational definition (Table 1) Source. processed from Table 1, Table 8, Table 9, (2021)

As stated in table 10, the role of truth theory and the role of contingency theory are fulfilled proportionally according to the research facts that we found. Therefore, as previously stated, theoretically refers to research facts from 6 (six) minor hypotheses in the major hypothesis (H01) being tested. It can be argued that there is an alignment of research facts with the acceptability of the role of truth theory and contingency theory (Cariveau et al., 2020; Shuttleworth, 2008). The facts of this study indicate that to some extent there is a harmony in the nature of the relationship between truth and reality (Rasmussen, 2013; Raynaud, 2019). The results also show that there is harmony in the implementation of <IR> courses, which can be explained through the role of theory as an antecedent and the role of theory as an explanation of the consequences of an implementation (Ara & Harani, 2020).

The Truth and Contingency Theory Toward Implementation of <IR> Course Teaching

Research facts from the articles reviewed explain the indicators of each type of truth theory and contingency theory. It began with application of theory which becomes the operational definition of research variables (Table 1). It means that the information knowledge from the articles reviewed is presented in relation to the level of analysis of the micro analysis of items of indicator or variabel of research. Then, referring to middle range theory or mesa level analysis, we can discuss the perspective of the role of the theory of truth and the role of contingency theory in relation to the implementation of teaching <IR> courses (Table 11).

Table 11*The Role of Theories Towards Teaching Implementation <IR>*

Type of truth theories and contingency theory ¹⁾	Role towards teaching implementation <IR> course ²⁾
Information knowledge of coherence	Fulfillment for input design <IR> course
Information knowledge of correspondence	Fulfillment for capstone design of <IR> course
Information knowledge of pragmatic	Fulfillment for output design of <IR> course
Information knowledge of convergence	Fulfillment for design improvement of <IR> course
Information knowledge of semantic	Fulfillment for external environment <IR> course
Information knowledge of contingency theory	Fulfillment for role of <IR> course within accounting curriculum

^{1) 2)} Align with items of indicators (Table 1, Table 5, Table 6; Table 7)

Source. Processed from Table 1, Table 5, Table 6, Table 7 (2021)

As states in Table 11, it showed that there are decisive relationship between the role of theoretical implementation through knowledge of truth theory and contingency theory regarding the teaching implementation of the <IR> course. In line with the need to fulfill design aspects (Abbasi, 2013; Astin, 2012) of the <IR> course, to achieve relevant accounting curriculum. Through outreach, effectiveness, adoption, implementation and maintenance (Nilsen, 2020) of <IR> course design. There is compliance with policy implementation (Cerna, 2013) in the context of an explanation of the theory of change regarding what causes the need for change in the teaching objectives of this <IR> course. Therefore, it showed being exist of relation of the theory of change (Fullan, 2007) in response the question of how the influence of global norms (IIRC, 2018b, 2020) on the implementation of this <IR> course. In its implementation which requires the application of aspects of coherence, stability, peer- support, training, involvement (Payne, 2008). This is in accordance with Fullan (2007) who explains that there are critical factors that influence the implementation of policies in the field of education. The determinants of policy success have a considerable impact (Fullan, 2009) in the implementation of the <IR> course teaching policy.

At the level of mesa analysis for the perspective of research facts with previous research shows the facts of harmony and differences in implementation perspectives. First, the propositions of coherence theory are in line with empirical facts about the role of grand theory in <IR> learning (Magnaghi & Aprile, 2014). Second, there are appropriate correspondence empirical facts (Atkins et al., 2015). However, this fact is different from the information knowledge perspective (Cooray et al., 2017; Kvernbekk, 2007). Third, the facts of pragmatic theory propositions are in line with the facts of previous research (Beck et al., 2017; Ormerod, 2020). Also, with the facts that there are relationship between the relevance of teaching and learning methods, as well as OBE - based curriculum on the effectiveness of learning outcomes (Hifni et al., 2021). Fourth, the facts of the convergent theory of truth are in line with the empirical facts of previous studies (Akbar et al., 2017; Tjahjadi et al., 2020). Fifth, semantic theory is related to several empirical facts from previous research (Badici & Ludwig, 2007; Clark, 2007). Sixth, contingency theory in the role of <IR> courses into the curriculum is in line with empirical facts (Iacuzzi et al., 2020; Radford, 2008; Rodrigues & Morais, 2021; Thagard, 2007) This study has a relationship with empirical facts about the dominant role of <IR> as reporting creativity (Melloni et al., 2017) for the placement of courses in the curriculum. Integrated report quality facts that meet various objectives, for various performance achievements (Barth et al., 2017).

However, this result is different from the previous fact regarding the appropriate type of industry, that the role of this contingent has no impact on the suitability of the <IRF> implementation (Altarawneh & Al-Halalmeh, 2020).

As an elaboration of the macro-level analysis, we find the presentation of the information obtained through the article review stage. At least of the 100 articles reviewed, a total of 32 articles were reviewed (Figure 2), demonstrating the role of this grand theory. This shows that there is a macro perspective in the implementation of <IR> course learning. In line with the role of grand theory (Rankin et al., 2012) which classifies theories based on positive and normative types. Such as, legitimacy theory, institutional theory, contingency theory, stakeholder theory, which have been the pillars or to be grand theory in the accounting field. This grand theory perspective will continue to be a discourse in the future, especially in involving the normative role of policy makers in the world of accounting education.

Conclusions

As a conclusion of this study, we present three development perspectives related to the role of academics in the education sector. As responding of academia and accounting higher education institution to the global phenomenon of reporting integrated <IR>. For achieve teaching implementation of <IR> course, that institutionalized in the accounting education curriculum.

First, this study provides research facts and insights into the role of truth theory and contingency theory whose knowledge information is mentioned in the articles reviewed. With being exist of the role of information knowledge of coherence, correspondence, pragmatic, convergence, semantics, and contingency. Information sources from review articles on education, accounting education and articles on integrated <IR> reporting systems, provide proportional knowledge information, which shows differences in the fulfillment of processes, and objectives in the implementation of <IR> courses (IIRC, 2018b, 2020). Then, show the role in determining the design aspects of the <IR> eye. For the implementation of learning <IR> courses in the accounting education curriculum.

Second, facts about the role of truth theory and contingency theory are extracted from the reviewed articles, which provide an important role for each to inform how <IR> courses are designed relevantly for teaching implementation. The relevance of the courses refers to the theoretical requirements of education (Abbasi, 2013), and fulfills the requirements to develop curriculum needs (Pembrige & Paretto, 2019; Schritter, 2021). The existence of the role of each type of theory of truth in the implementation of teaching <IR> courses is fulfilled from the most significant role of pragmatic truth theory, and the lowest role through coherence theory of truth. In contingency role theory (Van de Ven et al., 2013), it provides information regarding the most significant role for <IR> as creative design in reporting.

Third, we recognize that this study has limitations. It is related to how the new <IR> course is implemented in the context of teaching communication in the new normal era after the COVID-19 pandemic. Therefore, for further research, we imply the importance of strengthening research with a more comprehensive approach. It is hoped that it will increase the role of academics as stakeholders of the International Integrated Reporting Council (IIRC)

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Appendix 1: Articles used in the research literature review**Appendix 1.1. Articles with education / accounting education theme**

Year of publication and Authors-	Title of article, Journal –Proceeding
2003: Davis,	Outcome-Based Education, Educational Strategies, JVME,
2004: Stansfield et al.,	Enhancing Student Performance in Online Learning and Traditional Face-to-Face Class Delivery, <i>Journal of Information Technology Education</i>
2009: Shuaib et al., Zuhroh et al.,	Implementing Continual Quality Improvement (CQI) Process in An Outcome -Based Education (OBE) Approach, <i>Proceedings of the 2nd IC of Teaching and Learning</i> A Study on the Core Curriculum of Accounting as the Competencies Builders of the Accounting Graduates (A Study on The Accounting Graduates Who Work at Private Companies, State Companies, Non-Profit Organizations, And Public Accountant Firms in Surabaya), <i>Journal of Indonesian Economy and Business</i>
2011: Eppes and Milanovic,	Capstone Design Project Course Pathways, American Journal of Engineering Education
2012: Akir et al., Bloom, and Ehoff Jr, Gudeva et al., Lui, and Shum Parham et al.,	Teaching and learning enhancement through outcome-based education structure and technology e-learning support, <i>Procedia - Social and Behavioral Sciences</i> Accounting Capstone Course Design: Using The Internet To Modernize A Graduate Accounting Capstone Course, American Journal Of Business Education Designing descriptors of learning outcomes for Higher Education qualification, <i>Procedia - Social and Behavioral Sciences</i> Outcome-base education and student learning in managerial accounting in Hongkong, <i>Journal of Case Studies in Accreditation</i> , Accounting Majors' Perceptions of Future Career Skills: An Exploratory Analysis, American Journal Of Business Education
2013: Owen,	Integrated Reporting: A Review of Developments and their Implications for the Accounting Curriculum, <i>Accounting Education: an international journal</i>
2014: Biggs, Damasiotisa et al., Okoro,	Constructive alignment in university teaching, <i>HERDSA Review of Higher Education</i> IT Competences for Professional Accountants. A Review, International Conference on Strategic Innovative Marketing, IC-SIM, <i>Procedia - Social and Behavioral Sciences</i> Assessment of Accounting Competencies Possessed by Postgraduate University Business Education Students to Handle Entrepreneurship Business Challenges in Nigeria, <i>World Journal of Education</i>
2015: Babajide et al., Sangster et al., Veltri and Silvestri,	Should Integrated Reporting be Incorporated in the Management Accounting Curriculum ?, <i>International Journal of Education and Research</i> , The Impact of Accounting Education Research, <i>Accounting Education: an international journal</i> The Free State University integrated reporting: a critical Consideration, <i>Journal of Intellectual Capital</i>
2016: Abbasi, Tanweer and Qadri, Walner and Wagner, Yanto,	Competency approach to accounting education: A global view, <i>Journal of Finance and Accountancy</i> Quality Assurance in Higher Education: A Framework for Distance Education, <i>Journal of Distance Education & Research</i> Academic Education.40; <i>Conference Paper- Researchgate</i> ; International Conference on Education and New Development Internationalizing The Accounting Graduates' Competencies Through The Improvement Of Student Engagement. In: The 1st International Conference on Economics, Education, Business, and Accounting (ICEEBA 2016)
2017: Dumay et al., Rhaffor et al., Szadziewska et al., Taib et al.,	Barriers to Implementing the International Integrated Reporting Framework: A Contemporary Academic Perspective, <i>Meditary Accounting Research</i> Students' Perception on Outcome- Based Education (OBE) Implementation: A Preliminary Study in UnIKL MSI, <i>Conference Paper</i> , ResearchGate Analysis of the Curricula at Economic Colleges and Universities in Poland, in the Field of Finance and Accounting, <i>Proceedings of ICERI2017 Conference</i> Programme Learning Outcomes Assessment and Continuous Quality Improvement in Faculty of Mechanical and Manufacturing, UTHM; <i>ICAS 2016</i> ; <i>IOP Conf. Series</i>

2018: Acar and Rafet, Bisogno et al., Rufino et al., Yanto et al.,	Research and trends in accounting education from 2009 to 2016: A content analysis of publication in selected journals, <i>International Journal of Social Sciences and Education Research</i> Identifying future directions for IC research in education: a literature review, <i>Journal of Intellectual Capital</i> Competency Requirements for Professional Accountants: Basis for Accounting Curriculum Enhancement, <i>Review of Integrative Business and Economics Research</i> Graduates' Accounting Competencies In Global Business : Perceptions of Indonesian of Indonesian Practioners and Academics; <i>Academy of Accounting and Financial Studies Journal</i>
2019: Bujaki et al., Damşa and Lange, Handoyo and Anas,	Utilizing professional accounting concepts to understand and respond to academic dishonesty in accounting programs, <i>Journal of Accounting Education</i> Student-centred learning environments in higher education From conceptualization to design, <i>UNIPED, Research Publication</i> Accounting Education Challenges in the New Millennium Era, <i>Journal of Accounting Auditing and Business</i>
2020: Adhikariparajul et al., Andiola et al., Astuti, et al., Callo and Yazon, DeAlwis and David Ibiamke, and Ajekwe, Jaenudin et al., Kusmuriyanto et al., Maydiantoro et al., Melati and Harnanik, Mauro et al., Mudrikah et al., Nanda et al., Purnamasari et al., Rahman et al., Saeroji et al., Sehabuddin and Mustofa,	Integrated Reporting in Higher Education: Insights from Scotland, Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights, <i>Social, Responsibility Journal</i> The Effect of Students' Digital Literacy Skill to the Quality of Accounting Learning in Self-Directed Learning as Moderating Variables, <i>Journal of Accounting Education</i> Exploring the Factors Influencing the Readiness of Faculty and Students on Online Teaching and Learning as an Alternative Delivery Mode for the New Normal, <i>Proceeding ICE-BEES</i> Exploring the Factors Influencing the Readiness of Faculty and Students on Online Teaching and Learning as an Alternative Delivery Mode for the New Normal, <i>Universal Journal of Educational Research</i> Pennywise Rips Your Arms Off, You Still Won't Be Able to Wipe, So Keep Walking: Teaching During COVID-19 Lockdown, <i>Journal of Humanities and Social Sciences Research</i> Integrated Reporting and Implications for Accounting Curriculum in Nigeria, <i>European Journal of Accounting, Auditing and Finance Research</i> The Role of Environmental Learning to Improve Students' Entrepreneurial Intention, <i>Proceeding ICE-BEES</i> An Analysis of the Need of Teaching Materials Development for Financial Accounting on Character-based Conservation, <i>Proceeding ICE-BEES</i> (Emergency) Online Remote Learning in Higher Education Institutions during COVID-19 Crisis: Students' Perception of the Situation, <i>Universal Journal of Educational Research</i> Learning Microeconomics during the Pandemic: Does Digital Platform Management Matter ?, <i>Proceeding ICE-BEES</i> Moving from Social and Sustainability Reporting to Integrated Reporting: Exploring the Potential of Italian Public-Funded Universities' Reports, <i>Sustainability journal</i> Exploring the Technological Pedagogical and Content Knowledge (TPACK) of Vocational High School's Accounting Teachers, <i>Proceeding ICE-BEES</i> Study of Alumni Engagement and its Relationship to University Curriculum Reforming, <i>Proceeding ICE-BEES</i> Web-based Internship as a New Normal Learning Requirement for Accounting Students, <i>Proceeding ICE-BEES</i> The Impact of the Facility Condition and Social Influence on Intention to Use E-Learning, <i>Proceeding ICE-BEES</i> The 21 st Century Teacher Training Model with Online Mode: A Case Study Implementation of the Indonesian Virtual Coordinator, <i>Proceeding ICE-BEES</i> Analysis of Technology Acceptance in Student Entrepreneurs, <i>Proceeding ICE-BEES</i>
2021: Sarea et al.,	COVID-19 and digitizing accounting education: empirical evidence from GCC, <i>PSU Research Review</i>

Appendix 1.2. Articles with <IR> theme

Year of publication and Authors	Title of article, Journal –Proceeding
2015: Atkins et al.,	'Good' news from nowhere: imagining utopian sustainable accounting. <i>Accounting, Auditing & Accountability Journal</i>
2016: Burke and Clark	The business case for integrated reporting: Insight from leading practioners, regulators, and academics; <i>Business Horizon</i>
2018:	

Zenkina, Vesty et al., Tilt et al., Rossi, Pistoni et al., Menicucci and Paolucci, Kilic and Kuzey, Juma et al., Islam and Islam, Dumay et al., De Villiers & Hsiao, Chiucchi et al., Camodeca et al., Albertini,	Global Promotion of Integrated Reporting by Enhancing its Informative and Analytical Value for Stakeholders, <i>European Research Studies Journal</i> , Integrated reporting as a test of worth A conversation with the chairman of an integrated reporting pilot organization, <i>Accounting Auditing & Accountability Journal</i> , Integrated Reporting and Sustainability: A Note on Perceptions of the Accounting Profession, <i>Management Accounting Frontiers 1</i> Is integrated reporting a new challenge for public sector entities?, <i>African Journal of Business Management</i> Integrated Reporting Quality: An Empirical Analysis, <i>Corporate Social Responsibility and Environmental Management</i> Forward-looking information in integrated reporting: A theoretical framework, <i>African Journal of Business Management</i> Determinants of forward-looking disclosures in integrated reporting, <i>Managerial Auditing Journal</i> The Adoption of Integrated Reporting: A developing country perspective, <i>Journal of Financial Reporting and Accounting</i> Insights the Practice of Integrated Reporting: A Study on MNCs in Bangladesh on the Degree of Adherence to the Reporting Framework, <i>Open Journal of Business and Management</i> Integrated Reporting and Integrated Thinking: Practical Challenges, <i>Project: Integrated Reporting Literature Review</i> Integrated Reporting, In De Villiers, C & Maroun, W. (Eds.) <i>Sustainability accounting and integrated reporting</i> The Influence of Integrated Reporting on Management Control Systems: A Case Study, <i>International Journal of Business and Management</i> Sustainability Disclosure in Integrated Reporting: Does It Matter to Investors? A Cheap Talk Approach, <i>Sustainability</i> Integrated reporting: an exploratory study of French companies, <i>Journal of Management and Governance</i>
2019: Roman et al., Robertson and Samy Nicola et al., Marrone and Oliva Goicoechea et al., Farneti et al., El Deeb, Eccles et al., Corrado et al., Chariri, Beske et al., Baldarelli, Adhariani & De Villiers, Aluchna et al.,	Disclosure Style and Its Determinants in Integrated Reports, <i>Sustainability</i> Rationales for Integrated Reporting Adoption and factors impacting on the extent of adoption - a UK Perspective. <i>Sustainability Accounting, Management and Policy Journal</i> Does national culture affect integrated reporting quality? A focus on Globe dimensions, In: Mihajlović, Dragan Đorđević, Bojan (Ed.): <i>9th International Symposium on Natural Resources Management</i> Measuring the Level of Integrated Reporting Alignment with the <IR> Framework, <i>International Journal of Business and Management</i> Integrated Reporting Assurance: Perceptions of Auditors and Users in Spain, <i>Sustainability</i> The influence of Integrated Reporting and stakeholder information needs on the disclosure of social information in a state-owned enterprise, <i>Meditari Accountancy Research</i> The Impact of Integrated Reporting on Firm Value and Performance: Evidence from Egypt, <i>Alexandria Journal of Accounting Research</i> Comparative Analysis of Integrated Reporting in ten Countries, <i>SSRN Electronic Journal</i> Assurance on Integrated Reporting : A Critical Perspective: Antecedents and Perspectives for Organizations and Stakeholders, <i>ResearchGate</i> The Patterns Of Integrated Reporting: A Comparative Study Of Companies Listed On The Johannesburg Stock Exchanges And Indonesia Stock Exchanges, <i>Jurnal Reviu Akuntansi dan Keuangan</i> Materiality analysis in sustainability and integrated reports. <i>Sustainability Accounting, Management and Policy Journal</i> Integrated Reporting, Integrated Thinking and Gaming Companies: Myths and Paradoxes," <i>CSR, Sustainability, Ethics & Governance</i> , in: Samuel O. Idowu & Mara Del Baldo (ed.), <i>Integrated Reporting</i> , Integrated reporting: perspectives of corporate report preparers and other stakeholders, <i>Sustainability Accounting, Management and Policy Journal</i> Integrated Reporting Narratives: The Case of an Industry Leader, <i>Sustainability</i>
2020: Vitolla et al., Tjahjadi et al., Sánchez et al., Marrone, Mähönen, Landau et al.,	Integrated Reporting and Integrated Thinking : A Case Study Analysis, <i>Corporate Ownership & Control</i> , Implementation of Integrated Reporting: A Cross-Countries Study, <i>Entrepreneurship and Sustainability Issues</i> How Does Integrated Reporting Change in Light of COVID-19? A Revisiting of the Content of the Integrated Reports, <i>Sustainability</i> Corporate Governance Variables and Integrated Reporting, <i>International Journal of Business and Management</i> Integrated reporting and sustainable corporate governance from European perspective, <i>Accounting, Economics, and Law</i> Integrated reporting of environmental, social, and governance and financial data: Does the market value

Hazam and Mansor	integrated reports?, <i>Business Strategy and the Environment</i> Implementation Level of Integrated Reporting at Malaysia Local Authorities, <i>International Journal of Accounting, Finance and Business (IJAFB)</i>
Hamad et al.,	The Impact of Corporate Governance and Sustainability Reporting on Integrated Reporting: A Conceptual Framework, <i>SAGE Open</i>
Bochenek, Ara & Harani	Analysis of the integrated reporting use in EU countries, <i>Problems and Perspectives in management Integrated Reporting Insight: Why Organisation Voluntary Reports?</i> , <i>International Journal of Scientific & Technology Research</i>
Adhariani and Sciulli	The Future of Integrated Reporting in an Emerging Market: An Analysis of the Disclosure Conformity Level, <i>Asian Review of Accounting</i>
Agustia et al., (Altarawneh & Al-Halalmeh, 2020) and Al-Halalmeh,	Integrated reporting quality assessment, <i>Journal of Security and Sustainability Issues</i> Conformity of Annual Reports to an Integrated Reporting Framework: ASE Listed Companies, <i>International Journal of Financial Studies</i>
2021: Yulyan et al.,	The Influences of Good Corporate Governance and Company Age on Integrated Reporting Implementation, <i>Journal of Accounting Auditing and Business</i>
Soriya and Rastogi,	A systematic literature review on integrated reporting from 2011 to 2020, <i>Journal of Financial Reporting and Accounting</i>
Songini et al.,	Integrated reporting quality and BoD characteristics: an empirical analysis, <i>Journal of Management and Governance</i>
Sofian,	Perspectives of Romanian accounting professionals on Integrated Reporting, <i>Journal of Accounting and Management Information Systems</i> ,
Piesiewicz et al.,	Differences in Disclosure of Integrated Reports at Energy and Non-Energy Companies, <i>Energies</i>
Mawardani & Harymawan,	The Relationship Between Corporate Governance and Integrated Reporting, <i>Journal of Accounting and Investment</i>
Al Amosh and Mansor,	Disclosure of integrated reporting elements by industrial companies: evidence from Jordan, <i>Journal of Management and Governance</i>

Appendix 2:

Table 2*Types of articles and methods*

Types of Article	Amount	Types of Method	Amount
Design science/ survey design	2	Content analysis/Narative/ Case analysis	34
Review study	14	Content analysis	13
Explanatory Survey	34	Statistical method	28
Conceptual	15	Mix method	4
Empiric/ experimental	18	Etnographic	1
Empiric/ Exploratory study	12	Qualitative data analysis/ descriptive statistic	20
Qualitative descriptive	2		
Case study	3		
Amount	100	Amount	100

Source. Appendix 1.1.; Appendix 1.2.

Appendix 3:

Table 3*References to journals and proceedings/other sources with year of publication*

Year of Publication	Journal	Proceeding/ other source	Amount
2003	1	-	1
2004	1	-	1

2009	-	2	2
2011	1	-	1
2012	5	-	5
2013	1	-	1
2014	2	-	2
2015	5	-	5
2016	3	2	5
2017	1	3	4
2018	18	1	19
2019	13	3	16
2020	18	12	30
2021	8	-	8
Amount	77	23	100

Source. Appendix 1.1 and Appendix 1.2

Appendix 4:

Table 4

Articles in the context of research entities/subjects

Research context of entities/ subjects	Amount
Educational entities	44
Corporate/ firm/ company	33
Industry	2
Professional organization	6
Global organization	3
Country	4
Practioner	2
Public sector	5
Other	1
Amount	100

Source. Processed (2021)

Appendix 5:

Table 5

Information knowledge according to the source of information

Information knowledge	Source of information knowledge	
	Education-themed articles	<IR>-themed articles
Coherence theory of truth (CohTT) with indicators : Grand theories (32)/Middle range theories (100) Application theories (100)/research proposition statements (29)/ Conceptual framework (35)	16 / 50/50/11/18	16/ 50/50/18/17
Correspondence theory of truth (CorTT) with indicators : Facts of the conceptual framework (35)/facts of propositions/hypothesis (29)/Relationship of the subjects with the objects (99)/ relationship of the predicate with the object (99)/ the facts according to practice (77)	18/11/48/48/37	17/18/51/51/40
Pragmatic theory of truth (PraTT) with indicators:		

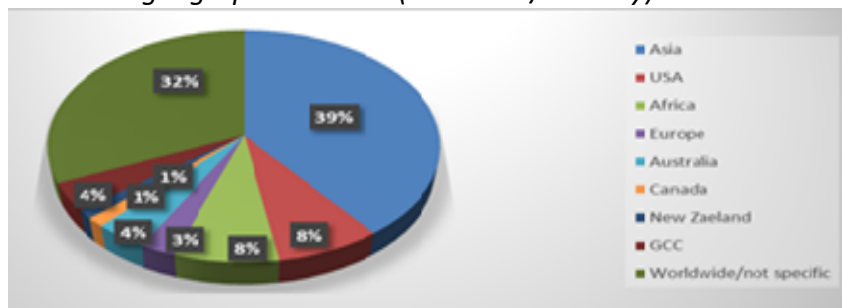
Voluntary/mandatory engagement (80)/Application benefits (99)/Actionable of conceptual framework (35)/Evidence of practice in research (84)/inquiry as an experiential process (89)	36/48 /18 / 36 /39	44/ 51 /17 / 48 /50
Convergence theory of truth (ConTT) with indicators:		
The role of stakeholders (78)/ coordination of stakeholder (78)/ The role of standard setter (42)/Collective decision towards group decision making (78)/ Lobbying by Professional bodies (54)	36/ 39 /12 / 36 /23	42 / 39 /30 / 42 /31
Semantic theory of truth (SemTT) with indicators:		
Sentential for reference (97)/ Sentential predicate of proposition (29)/ Sentential predicate of content (97) / Sentential predicate of context (98)/ Being context within evaluation process (69)	49 / 18 / 46 / 47 /36	48 / 17 / 51 / 51 /33
Role of contingency theory (RoCT) with indicators:		
<IR> course contingently as configuration (72)/ <IR> course as complementary (86)/ <IR> course as suppressing complexity design (79) <IR> course as creative design (94)/ <IR> course as performance Diverse performance diversity (84)	30 /43 / 42 / 46/41	42 / 43 / 37 / 48 /43

Source. Restated from scorekeeping data for indicators, 2021; *

Appendix 6

Figure 1

Articles in geographic context (continent/Country)



(Source: Appendix 1.1.; Appendix 1.2)

Appendix 7

Table 8

Observation frequency (OF) and expectation frequency (EF)

Variables	CohTT	CorTT	PraTT	ConTT	SemTT	RoCT	TiIRC	Amount
Level of implementation								
Very implemented								
Score 5 (OF)	4	10	24	26	18	48	52	82
EF	11,7143	11,7143	11,7143	11,7143	11,7143	82	11,7143	
Implemented								
Score 4 (OF)	26	36	49	14	60	23	41	185
EF	26,4286	26,4286	26,4286	26,4286	26,4286	26,4286	26,4286	
Implemented enough								
Score 3 (OF)	33	41	17	29	18	23	7	138
EF	19,7143	19,7143	19,71423	19,7143	19,7143	19,7143	19,7143	
Less implemented								
Score 2 (OF)	37	13	10	22	4	6	0	86
EF	12,2857	12,2857	12,2857	12,2857	12,2857	12,2857	12,2857	
Very less implemented								

Score 1 (OF)	0	0	0	9	0	0	0	9
EF	1,2857	1,2857	1,2857	1,2857	1,2857	1,2857	1,2857	
Amount	100	100	100	100	100	100	100	700

Sources. Processed from primary data (2021)

Notes: The data in Table 8 below is the result of processing the measurement data from frequency of observation (OF) with the data of the expected frequency (EF) of independent variable, and data scorekeeping from dependent variable (Table 5, Table 6, and Table 7).

Appendix 8

Table 9

Chi square observation

Variables	CohTT	CorTT	PraTT	ConTT	SemTT	RoCT	TiIRC	Amount
Level of Differences	-7,7143	-1,7143	12,2857	14,2857	6,2857	-34	40,2857	
	59,5102	2,9388	150,9388	204,0816	39,5102	1156	1622,9388	
X Observation	5,0801	0,2509	12,8850	17,4216	3,3728	14,0976	138,5435	35,6376
	-0,4286	9,5714	22,5714	-12,4286	33,5714	-3,4286	14,5714	
	0,1837	91,6122	509,4694	154,4694	1127,0408	11,7551	212,3265	
X Observation	0,0069	3,4664	19,2772	5,8448	42,6448	0,4448	8,0339	28,5954
	13,2857	21,2857	-2,7143	9,2857	-1,7143	-2,7143	-12,7143	
	176,5102	453,0816	7,3673	86,2245	2,9388	7,36735	161,6531	
X Observation	8,9534	22,9824	0,3737	4,3737	0,1491	0,3737	8,1998	36,6832
	24,7143	0,7143	-2,2857	9,7143	-8,2857	-6,2857	-12,2857	
	610,7959	0,5102	5,2245	94,3673	68,6531	39,5102	150,9388	
X Observation	49,7159	0,0415	0,4252	7,6811	5,5880	3,2159	12,2857	57,8638
	-1,2857	-1,2857	-1,2857	7,7143	-1,2857	-1,2857	-1,2857	
	1,6531	1,6531	1,6531	59,5102	1,6531	1,6531	1,6531	
X Observation	1,2857	1,2857	1,2857	46,2857	1,2857	1,2857	1,2857	54
Amount								212,7800

Sources. Processed from data in Table 8 (2021)