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Twenty-First Century Instructional Design: Guiding Vocational Instructors Designing E-Module

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Abstract: Instructional design can be challenging in a vocational education setting, such as in a beauty institution where knowledge has to be balanced with practice, and trained individuals in this area are needed specifically for the new and emerging profession of health and beauty consultant. The e-module was designed using the Dick and Carey model consist of 10 steps. This study uses qualitative approach through semi-structured interviews conducted online with 3 students, 1 instructor and 2 observers from skin analysis class in PIBI Surabaya. The transcribed interview data were analysed using Atlas.ti software to produce codes.
This study aimed to develop an instructional design for non-formal vocational education as a guide for instructors in creating quality training using an online learning approach. Based on the qualitative results, there are 4 categories that the researcher were asking about, which is media, content, strategy, and student's response with feasible, practical and effective as the indicators. This study concluded that the instructional design can be used as a reference for instructors in preparing and delivering learning materials where the focus is centred on individual student, with the end goal of achieving competencies (attitude, skill and knowledge/ASK), eight employability skills, five dimensions of competence and twenty-first century skills according to the needs of the industry nowadays.

Keywords: Instructional design, competence, vocational preparation, job skill, skill needs

1. Introduction

The world of beauty services is growing rapidly, nowadays beauty treatment/therapy industry need a health and beauty consultant to be taught specific knowledge for the profession. So it is very important for vocational institution to have programmes that can deliver a qualified health and beauty consultant and employed by bussineses, performing specific duties, such as conducting correct and effective consultations and analysis. Currently, advanced technology in terms of equipment and both invasive and non-invasive treatment measures, as well as professional services, are in demand. Health and beauty consultants are required to have both soft and hard skills, be knowledgeable of various skin conditions or problems and be able to analyse, diagnose and determine the proper care for a client's skin. This is not only needed for employment in a beauty salon and clinic but also in hospitals that provide aesthetic treatments/therapy.

The beauty industry is quite broad, consisting of two different worlds that complement one another which are services and products. It is important to know the difference between the beauty product industry and the beauty service industry. In the beauty product industry, the terminology of a beauty advisor or beauty consultant has been known for many years, where their responsibilities involve providing customer service for shoppers who are trying to choose skin care products, cosmetics, or other beauty products for purchase, as well as recommend products and help advise customers, to sell the product. Meanwhile, a health and beauty consultant works in the field of beauty services in

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beauty salons, beauty clinics, health and beauty service centers in hospitals or SPA facilities with various tools, treatments and therapy programmes, specialise in consultation, analysis and diagnosis to determine the proper beauty treatments/therapy.

Instructional design for a health and beauty consultant is also being taught to therapist Level 5 as stated in the Indonesian national qualification framework (KKNI) as a spesialist beauty therapist/specialist aesthetic therapist/skin therapist/skincare specialist, in order to conduct consultations and analyse, properly diagnose and systematically and correctly evaluate the condition of a client who is worried about their skin problems. A client may be experiencing a variety of problems, not only due to ageing or irritation to their skin, such as blackheads, hyperpigmentation or acne, but also other concerns from using advanced beauty technologies like radio frequency, intense pulse light therapy and medical aesthetic therapy like botox, chemical peeling, and facelift that require appropriate aesthetic therapy advice and guidance in regard to treatment options. The success in conducting a consultation, analysis and diagnosis from a professional as described is challenging for many students/learners, even those who have had experience working in the field, that's why it's important for the instructor to create an instructional design (planning, instruction and evaluating) and teach student both knowledge and practice so that they can perform a consultation.

If someone wants to learn to be an advanced beauty therapist or senior aesthetician, they must also learn the skills and knowledge associated with these tasks, just like a health and beauty consultant. An advanced beauty therapist or senior aesthetician is different from a health and beauty consultant and can be seen by skills acquired by gradually advancing to the next level. Duties and tasks performed by a health and beauty consultant among others are able to do consultation, analysis, and diagnosis of customer's skin according to the Indonesian national qualification framework (KKNI) Level 5, and are allowed to use a variety of advanced technologies for therapy.

In general, vocational education and training (VET) is growing rapidly, as evidenced by the emergence of many new journals, the expansion of research volumes and international collaboration by international VET institutions (McGrath, Mulder, Papier & Suart, 2019). A key issue in this growing field is that educational institutions are often accused of producing graduates who are not ready for their jobs (Mulder, 2017). The two main challenges in professional and VET are the low levels of relevance and coherence between the content of educational programmes and competency development in an individual's working life, while a similar challenge in teacher training programmes is the gap between theory and practice, which can also be described as being a gap between education and competency requirements in the workplace (Billet & Choy, 2013; Hiim, 2017; Sullivan, 2005). Thus the competence needed have to be adapted to the workplace demand, and that is what should be taught on a vocational institute.

In this article, the author will first present how the concept of competency is used in VET. Next, an overview is provided of the instructional design of e-module for desired learning outcomes and previous research about applying an instructional design model. The research method will be described, the results will be presented, and the final conclusion will be discussed.

1.1 Competency in VET

VET stakeholders question the content of curriculum education programmes for student competency development, realising that students need to be prepared for a future that is largely unknown but which is likely to be very different in terms of emerging and upcoming jobs. If a curriculum focuses solely on the work of today, it is guaranteed to be outdated by the time students graduate. The design of vocational education and training programmes now focuses not only on work-related tasks and activities but also on more general competencies, such as problem-solving, critical thinking, innovation and transformation.

The concept of "competence" originated in ancient times and has been traced back to Greek, Latin, French, English and Dutch sources (Mulder, 2017). One way to approach competence is to identify performance standards that serve as indicators in various professional roles. A useful method is to have these performance standards evaluate attitudes, skills and knowledge (ASK). Knowledge is generally the things someone remembers, from specific terms to the steps in a process or even more complex information about a topic. A skill is the ability to do something. Knowing how it should be done is, of course, knowledge; being able to do it is demonstrating the skill. Attitudes regard emotions, such as motivations, surrounding someone's use of skills and knowledge. Skills cannot be the only thing prioritised in learning without adequate attention to the related attitudes and knowledge in accordance with a professional context.

A main concern of stakeholders in VET regarding the beauty and spa industry is the professional competence of their students in providing skin care/therapy services in alignment with current trends. These focus on the promotion of clean, natural and more youthful results of skin care with the help of treatments from professional beauty therapists. Currently, clients need the help of competent, dedicated and trained aesthetician/skin care specialist/health and beauty consultant. At the institute, the aim is to provide these professionals through non-formal education and specialised teachers/instructors in specific fields to help the students acquire the ASK competencies, eight employability skills which are communication, team work, problem solving, initiative and enterprise, planning and organising, self-management, learning, and technology (Australian Chamber of Commerce and Industry & Business Council of Australia, 2002) and five dimensions of competence are task skills, task management skills, contigency management skills, role and job environment skills, and transfer skills (Singapore Workforce Development Agency, 2007), combined with the ability to use beauty tools and information and communication technology in the workplace. As the

need for teaching twenty-first century skills is recognized, there will be an increasing demand for such instructional design, so that schools are likely to become better equipped to meet their students' needs for the future (Griffin & Care, 2015). These skills will help students and are vital to success both in school and the workplace.

Competence is integrated performance ability, consisting of work attitudes and psychomotor and cognitive skills used to achieve desired learning outcomes, carry out tasks and solve problems; it involves planning, control, coordination, monitoring and evaluation, as well as performance that requires special skills (Avis, 2018). Competence includes the ability to apply knowledge and skills to overcome challenges and the ability to think critically, collaboratively, creatively and innovatively in practising a profession (Sytle, 2020). It also represents important attitudes and values in one's social life, which help to improve the standard of living in a community (Tapani & Salonen, 2019).

So-called "twenty-first-century skills" have become the focus of job preparation education and training and the centrepiece of industry leaders' attention to maintaining a competitive edge in the ever-changing technology of the developed world. Twenty-first-century skills consist of both soft and hard skills. Soft skills include personal and interpersonal abilities (people skills), and hard skills refer to the technical knowledge and expertise possessed by a person (Robles, 2012). The challenges created by emerging technology in the Fourth Industrial Revolution (Schwab, 2016) will continue to advance in the twenty-first century, meaning individuals must be prepared with job-related skills and the right work attitudes to become productive and competitive citizens in the workplace (Stone & Lewis, 2012). The top ten soft skills identified by 57 executives in 2012 were communication, manners, flexibility, integrity, interpersonal skills, positive attitude, professionalism, responsibility, teamwork and work ethic (Robles, 2012). Many previous studies have demonstrated that for a labourer to be successful in a job, soft skills tend to be relatively more important than hard skills (John, 2009). All these competencies will be required for professional workers in the field of beauty as part of the industry in the twenty-first century. Many individuals currently in school will eventually have to work in a completely different environment, likely in new and unprecedented jobs (McGrath et al., 2019). In the beauty industry, in addition to other beauty trends, there is a rapid evolution of beauty tools and therapy.

The results of national and international studies have shown that Indonesia has been experiencing a learning crisis for a long time. PISA shows that Indonesian students are performing some three years behind the OECD average. Over 50% of Indonesian fifteen-year-olds do not master basic skills in reading or mathematics (OECD & Asian Development Bank, 2015, p.19). Furthermore, a large disparity in the quality of education among regions and social groups is still a challenge in Indonesia (OECD & Asian Development Bank, 2015). This situation has been exacerbated by the COVID-19 pandemic, which has drastically affected the teaching and learning process; technological aspects must be integrated with current learning environments to create learning spaces designed to be delivered both online and offline, partly due to unavailability of regular or fast internet connectivity and partly due to the capacity of teachers or regions to support remote learning (Unicef & Unesco, 2021, p.11). To overcome these problems, systemic changes are needed to improve the quality of teachers and schools, which is a key factor in the transformation of learning. One of the biggest challenges in any online learning setting is creating the right mix of relevant learning settings and teaching strategies that can ultimately meet the desired learning outcomes.

Many vocational teachers/instructors have broad competencies and experience in a particular field of work and have progressed in their working lives, which has influenced how they select content and make decisions about their students' learning. However, these decisions are not always in accordance with what is expected in the overall curriculum (Guile & Unwin, 2019). According to Shulman (1986), teaching competency is about promoting learning so that a teacher's professional knowledge combined with pedagogical knowledge. Thus, teaching competency is associated with the ability to explain certain problems, concepts or phenomena in a way that can be understood by students.

1.2 Instructional Design for Desired Learning Outcomes

The curriculum can be seen as a means to achieve certain educational goals and objectives. In this sense, the curriculum can be considered a checklist of desired learning outcomes (Wenshu, 2012). Module are tools used in the classroom, enabling teachers to promote in students what they believe to be the most effective way of learning. Because of the central role of module in influencing what happens in the classroom, it is hoped that there will be ample literature in any given discipline on how it have been properly designed and developed. In fact, this is often not the case. Compared with the vast amounts of the module being produced and distributed by individuals and organizations, there are far fewer detailed descriptions of designing and developing e-module by instructors using an instructional design model that is feasible, effective and practical, especially in non-formal educational settings, such as in the beauty and spa context.

Using an instructional design model in developing an e-module provides a solution to many of the obstacles faced by instructors and can improve the quality of their teaching in a student-centred classroom. ID is not only about creating a module, but also about carefully considering how students learn/learning style, and materials, methods that will help them achieve their academic goals (Purdue Online, n.d, para. 2).

Reiser (2001) pointed out that ID was not recognised as a separate field until the 1960s. In the five decades since then, ID has grown rapidly due to increasing demand. The rapid growth of online learning, an expansion of

technological tools, increased availability and access, and the emergence of multiple learning environments are among the most prominent trends (Allen & Seaman, 2016; Kim, Hannafin & Bryan, 2007). The overall role of programme design and, by extension, the future impact of online instruction at the institutional level often also positions instructional designers as leaders (Shaw, 2012). Caplan and Graham (2008), referring to the digital arena of education, describe online course design as a "complex endeavour" requiring "a highly organized and concerted effort" (p. 186). Education has been described by Lohr and Ursyn (2010) as more complex than rocket science, and ID is styled as a "special type of problem-solving" (Simon, 1998, p. 345), which requires practitioners to possess a wide range of abilities and personal characteristics to improve and change the cognitive, psychomotor and affective states of learners after completing the learning/training (Hatcher, 2008).

2. Previous Research Related to Applying an Instructional Design Model

Although the Dick and Carey model (DCM) is one of the older and most well-known instructional design models, specific research articles that focus on examining its use, especially in the vocational field, are more difficult to find. A notable example is Jabaay et al. (2020) "Trauma and Triage: Applying the Dick and Carey Instructional Design Model to a Primary Survey Clinical Workshop". This article describes the application of the DCM in the context of medical/medical education, which made it very easy for instructional designers, even novice ones, to identify needs and learning objectives. The article "Integration of Dick and Carey Design in String Ensemble Class Instructional Material Design" (Sabri & Rahim, 2020) advocates the use of the DCM by designers of instruction in the Malaysian higher education system, as the steps can be personalised and adapted to the approach instructors use in practice.

3. Research Methodology

As stated above, this research aimed to develop an instructional design for non-formal/vocational education as a guide for instructors in creating quality training using an online learning approach. The DCM is perhaps the most influential of the first generation of instructional design models and has set the standard for training in instructional design to date (Gustafson and Branch, 2002). The DCM has sequential, logical, detailed steps; each step accepts input from the previous one and provides results for the next step; and if an error/failure occurs, one can return to make improvements at each step to improve the instruction according to the learning/training objectives (Dick, Carey & Carey, 2015).

The DCM helps instructional designers develop an instructional materials through a series of steps that work together towards defined instructional goals (Dick et al., 2015). The systematic steps in the DCM are described here in general and then by applying it to the example skin analysis class for an advanced skin care programme that will be used as part of the design and development of an e-module. At the end of the e-module development, the researcher will conduct a trial to assess if the e-module reach the goal intended and to get feedback from the participants. Respondents consisted of 3 students, 1 instructor and 2 observers from PIBI Surabaya. The instructor and observers are lecturers with experience in teaching and working in Non Formal Education Institution and Skills Training Centre in Surabaya Indonesia. All respondents (N = 6) are individuals who are involved in the Technical and Vocational Education field.

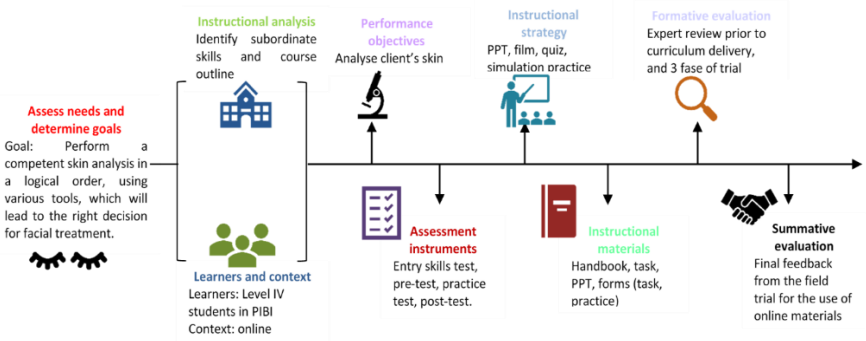

Fig. 1 - Dick and carey model adapted to a skin analysis materials

3.1 Identify Instructional Goals

In this step, the instructor conducts an analysis of instructional objectives, or front-end analysis, which can also include performance analysis, needs assessment and job analysis. In general, a needs assessment is considered a central component of a vocational training strategy (Seel, 2017). A needs assessment "identifies gaps in results, places them in order of priority, and selects the most important for closure or reduction" (Watkins and Kaufman, 1996, p.13).

A needs assessment identifies the desired level of performance and compares it with current performance (i.e. Desired Status - Actual Status = Need). Desired status is the level of competence wanted in the students at the end of the training according to the professional standards in the intended industry. In the example programme, it is expected

that upon completion of the training, the student can act as a consultant or senior therapist who can perform analysis and diagnosis according to the needs of a twenty-first century aesthetic therapy centre/salon and aesthetic clinic.

3.2 Conduct The Instructional Analysis

After identifying the instructional objectives, an instructional analysis can be developed. Instructional analysis is a set of procedures that help identify the skills and knowledge that should be incorporated into the instruction. Benjamin Bloom created a well-known classification of three domains of learning outcomes (Anderson & Krathwohl, 2001): the psychomotor domain, affective domain (attitudes) and cognitive domain. He also created a taxonomy within the cognitive domain that consisted of knowledge, understanding, application, analysis, fusion and evaluation. Influenced by this work, instructional objectives are classified in the DCM as verbal information, intellectual skills, psychomotor skills and attitudes.

The instructional analysis process is needed to determine what skills, knowledge and attitudes students need to succeed in learning and become competent. The instructor determines the steps that students must go through to achieve the ultimate goal of training. It was determined earlier that the ASK competencies, eight employability skills and five dimensions of competence combined with the twenty-first century skills would be indispensable to a professional in the future, and should be emphasised throughout the instruction. These skills need to be possessed and mastered by a Level 5 health and beauty consultant who will have duties in addition to communicating with clients in providing appropriate information on skin conditions and problems to diagnose as well as determining appropriate action to take. An illustrative example of hierarchical analysis for the instructional purposes of skin analysis can be found in Figure 2.

3.3 Analysing Learners and Context

Whose instructional needs should be addressed in solving a performance problem? Who must be convinced by the results of the need assessment to authorise an instructional project and provide the resources to carry it out? To answer these questions, instructional designers must identify the target participants, performers and decision makers. The performers are the employees (or students in the training context) whose instructional needs will be identified through a need assessment process, while the decision makers are individuals whose support will be crucial, such as a supervisor and/or instructor who will use the results of the needs assessment (Rothwell et al., 2016).

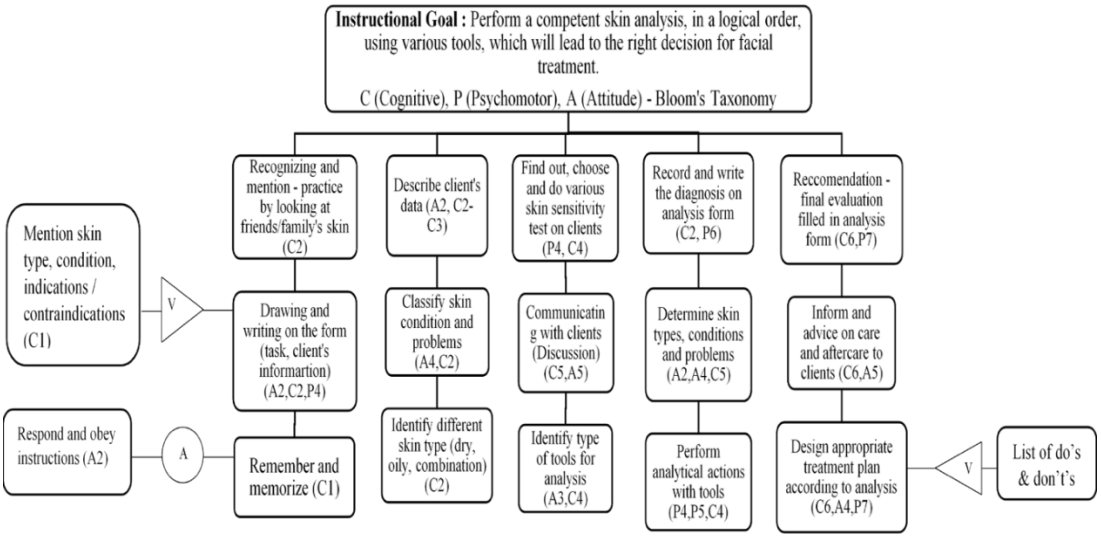

Fig. 2 - Subordinate skill flowchart for skin analysis

The population of students in skin analysis class at PIBI had specific characteristics beginning with an interest in becoming a health and beauty consultant, an advanced beauty therapist or senior aesthetician. Some other characteristics were that there were far more women than men, which is typical in this field. The ages varied from around 18 to 50 years old, and the students consisted of high school graduates, medics/doctors who own or work in a beauty clinic/salon and business owners who want to add more services by using technological beauty tools; the minimum education level was a senior in high school, but there was a wide range beyond that.

3.4 Writing Performance Objectives

The fourth step of the DCM involves instructional analysis, which results in the creation of performance objectives that consist of three unique components: condition (Cn), behaviour (B), and a criteria statement (Cr). The condition

statement establishes the environment in which the performance will occur, the behavioural statement describes the actions that learners must take to achieve the goal and the criteria statement establishes performance expectations for how the student's performance will be assessed in future evaluations (Dick et al., 2015). Table 1 describes the subordinate performance objectives in the skin analysis class; these indicate what a student must do to achieve the instructional goals that have been set by designer/instructor.

Table 1 - Performance objectives: verbal information, intellectual skills, attitudes, psychomotor tasks

Instructional Goal	**Subordinate Performance Objectives** **Cn**-Condition**, B**-Behavior**, Cr**- Criteria
Recognizing skin type	From memory (Cn), describe the skin type (B) exactly like you have learned on anatomy and fisiology class (Cr).
Identifying skin type, condition and problem	During synchronous class using Zoom (Cn), students learn by looking at fellow classmate's skin to identify skin type (B), so they can describe to the instructor after (Cr).
Clasify skin condition and problems	For asynchronous class (Cn), students will do the consultation with their family member or roomates and classify the skin condition and problems (B), this signifies repetition so that student can get used to it (Cr).
Identify tools for analysis	Using handbook and from the instruction in class (Cn), students learn to identify type of tools for skin analysis (B) to be able to correctly analyse client's skin and decide on the right treatments (Cr).
Communicating with clients	During simulated practice supervised by instructor (Cn), student learn to communicate and gather information about their clients (B) to proper diagnose client's needs and problems (Cr).
Find out, choose and do sensitivity test	During synchronous class at the workplace for practice purposes (Cn), apply the sensitivity test to client/model's skin (B) so the right treatment can be chosen without the risk of unwanted side effect towards the treatments (Cr).
Record and write on analysis form	Using analysis form given by instructor (Cn) write down client's information and diagnosis (B) for the record and then file it (Cr).

3.5 Developing Assessment Instruments

Once performance goals have been set, various assessments are needed to evaluate whether the learner has achieved them. By directly measuring the skills in the performance objectives, it can be determined if the desired learning outcomes have been achieved and a learner possesses ASK competencies (Dick et al., 2015). In this instructional design using skin analysis module, assessment insruments used was an entry skills test, pre-tests and post-tests and practice test. Questions modified accordingly to Level 5 of Indonesian national qualification framework (KKNI), with multiple-choice answers were used as pre-tests and post-tests, then as a final evaluation there is practical skill test to be carried out. An example of pre-test/post-test is provided in Figure 3.

Pre-test/Post-test

1. To take part in Beauty Consultant programme, students must have the ability to recall/remember knowledge that has been learned, as a requirement, which is?
   a. facial anatomy physiology,
   b. cosmetology,
   c. sanitation, and hygiene, K3 (Occupational Health and Safety)
   d. All answers are correct
2. Beauty Consultants are able to understand how to describe and gather initial information for new customers on the customer information card by:
   a. Identify, learn new customer data from waiver form, and conduct consultations and record the results of observations and interviews during consultation.
   b. Inquire directly about treatment needs and problems related to the customer's health and allergy history.
   c. Analyze customer skin conditions and perform various skin tests, and record the data obtained.
   d. From the consultation data, beauty consultants offer customers the expected treatment options.
3. What is the method used by beauty consultant to gather information or data that can be recorded and later used as a basis for providing therapy other than using the waiver form?
   a. Observation/Observation method
   b. Question and answer method
   c. Visual Aids
   d. All answers are correct

Fig. 3 - Pre-test/post-test example

3.6 Developing an Instructional Strategy

After determining the instructional goal, the designer can develop an instructional strategy to fit it. Instructors also need to master various teaching theories and apply appropriate strategies to keep students motivated to follow all the subject matter. For example, movement can be used and plays a powerful role in learning and training; it is one of many tools that can be used to strengthen a student's ability to pay attention and also improve their cognitive abilities (Kuczala, 2015). Table 2 provides an example of an instructional strategy that we developed for some of the skin analysis objectives classified as intellectual skills; everything listed in the table constitutes some cognitive activity that learners must experience and was carefully created or selected by the designers/instructors.

Table 2 - Instructional strategy for skin analysis intellectual skills

Learning Component	Considerations for Each Component	Instructional strategy for intellectual skills
Preinstructional Activities	Provide for motivation	Play a short film/video showing a professional health and beauty consultant.
	Relevance	Practice material must be similar to the real working world.
	Confidence	Practice a few times in class supervised by instructor, to provoke confidence.
	Inform learner of objectives	Perform a competent skin analysis in a logical order, using various beauty tools, which will lead to the right decision for facial treatment.
	Promote recall of prerequisites	Remind students of knowledge and information from anatomy and fisology class.
	Link new content to existing knowledge/skills	Initial knowledge of anatomy and fisiology combine with knowledge about advanced beauty tools, how to communicate with clients and filling out client's information card.
Content Presentation and Learner Guidance	Sequence based on hierarachy among skills	According to the subordinate skill created in step 2 of DCM to achieve training goals.
	Provide examples and non-examples	Demonstrate correct and incorrect way of analysing skin while talking with learners so they learn strategy and pay attention to avoid consequences.
	Create ways of organizing new into existing skills	Show a short film/video of health and beauty consultant analysing skin (Do not show actual step of analysing, only planning actions)
Learner Participation	Practice	Follow the instructor's instructions (fill in google forms, mentimeter), be active and interactive in class.
	Feedback	Everytime you finish working on a task, either synchronously or asynchronously, the instructor must immediately provide feedback to learners. Like wise during practice, if learners aren't doing it correctly then instructor must help to improve.
Assessment	Ensure learners' readiness for testing	Ensure the readiness by looking at the understanding and knowledge gained, from the collected assignments, pre-test and post-test, and practice test.
Follow-Through	Promote transfer (authentic tasks to performance context)	Simulated practice are made similar to real condition of working world, so learners can be better prepared in term of increasing their knowledge and competence becoming a health and beauty consultant.
	Ensure job environment receptive	Each learner assesses the quality of his/her action after the practice test

3.7 Developing and Selecting Instructional Materials

After developing a learning strategy, the next step is to determine which teaching materials are appropriate for the training objectives that has already been set in step 2 DCM, conduct instructional analysis. In addition to choosing the right teaching materials, the designer must pay close attention to the ability and role of instructor in helping to design and deliver the training materials or if their role is more constrained as a facilitator, motivator and evaluator (or some combination of them); the answer to this will depend a great deal on the educational context (such as the organization) and the specific skills and experience of those involved in the instruction. This will have an impact on the design of the

training delivery system in the classroom; a distinct example can be seen in the actions taken by the instructor during the training. Table 3 provides an example of the instructor's scripted actions for Day 4 of the class in which there is a combination of theory and practice that has to be guided by the instructor via Zoom videoconferencing (synchronous online). Numbers on the table represent the twelve key actions that enhance cooperation in the following class script, to see how the instructor using each of these twelve cooperation-encouraging actions in online class.

Table 3 - Class script example for day 4, combination of theory and practice

Leader/instructor actions point	Class Script
6. Encompasses total group with eyes, inviting all to participate freely 11. Acknowledges group accomplishments 12. Praises group effort and accomplishment	(Smile while looking at all students in Zoom class) Good morning professionals, I'm very happy that we can meet again and continue to learn and enhance our knowledge with the material today, which will take you all to deeper understanding and knowledge by practicing the theoretical materials that have been studied last week. The practice that was carried out was slightly innovated in this online class to analyse one's own skin and then the participants were divided and entered into several breakout rooms/BOR, and took turns analysing their classmate's skin.
1. Suggests points of discussion as questions	So when analysing facial skin between classmates, follow the steps in customer information form, and fill in all the questions about, skin conditions, types, and problems.
After Breakout Room activity	
2. Uses an investigative, inquiring tone	How is it after this session? Are you feeling confused or are you certain that you know what are you doing in skin analysis?
5. Willingly turns over the floor to group members who interrupt	Anybody can give their opinion and describe the results of their respective analysis, don't be afraid to say the wrong thing or be embarrassed, because here in this class we are sharing our knowledge and experience that we have
4. Hesitates and pauses between speakers	Pause before throwing the next question.
9. Encourages volunteerism 8. Uses comments that keep discussion centered in the group	Okay, is there anybody else that wants to share or ask a question from the results of the previous session? Any new knowledge shared from your classmate in Breakout Room earlier?
7. Nonverbally (eyes, gestures) encourages speaker to address group	If there are several people who want to speak at the same time, instructor can direct who speaks first- taking turns
3. Uses open terms such as perhaps and might	By sharing with each other, it might be possible to add more insight on how to communicate with customers which is one of 8 employability skills required in the professional world of work (8 employability skills, 5 dimensions of competence), acquiring the right information to be able to give the right recommendation of beauty care according to customer needs.
12. Praises group effort and accomplishment	Thank you for your participation today being active and interactive, therefore i believe that the preparation of learning theory and practice, can be very useful in increasing your confidence level and knowledge in performing facial skin analysis, so that it can be useful in your place of employment.

3.8 Designing and Conducting Formative Evaluation

Initially, expert judgment was needed to verify the validity and reliability of the module, as well as all the instruments needed for it, by a content, media and learning experts. After e-module and instruments were validated by the experts, one to one and small group evaluation were done to make improvement towards the module design which then used for the field trial. Trial conducted involving the training institution (in this case, PIBI) and students in skin analysis class who were part of the target population. Part of systematic development emphasises the collection of data from the target population/audience regarding the feasibility, practicality and effectiveness of the instruction (in this case, the online materials). Data collected from online interviews conducted by researchers using four type of instruments which are media, content, strategy and student's response.

3.9 Revise Instruction

Revisions can be carried out at each development step (starting with the second step) as necessary to make improvements according to the DCM. Information from the formative evaluation is useful for determining product deficiencies and will then be used to improve the quality of the developed product.

3.10 Designing and Conducting Summative Evaluation

The purpose of the summative evaluation is to determine the impact of the instruction on learners, their job and the organisation after the necessary changes have been made and a final version has been used. This step does not focus on further revisions to the instruction, but rather on documenting findings for decision makers who must decide whether to fully implement (or continue using) the instruction (in this case, the e-module). Data collection was obtained through a questionnaire that can be filled out by participants in the form of an online form (such as Google Forms).

4. Findings

As a result of the analysis of the in-depth interview with the students and instructor for skin analysis class to assess the e-module. Module designer/developer also needs to assure that the time allocated for the samples to go through the module is sufficient. After the experts have evaluated the draft module, corrections were made upon recommendations, and then used for the field trial.

The data collected from the interview sessions was analysed using thematic analysis on Atlas.ti. The interviews were transcribed, and the transcripts were analysed and coded, data was then classified according to the emerging themes. These emerging themes were used to discuss advantages and disadvantages from the module to see whats the weaknesses are and revise it. Some of the answers from each respondents can been seen below table 4 as a representation on how the code was formed using the analysis tool Atlas.ti. The results of online interviews conducted related to the implementation of e-module using DCM are shown on table 5. The checkmark on the table means that the code emerged was a conclusion of the answers that were given by the respondents are similar in nature. Overall feedback shown a positive reaction toward e-module.

Table 4 - Interviewed respondents

Participant code	Status	Working/Teaching Experience
S1	Instructor	20 years
S2	Observer	15 years
S3	Observer	10 years
S4	Student	5 years
S5	Student	1 year
S6	Student	-

Firstly, the researcher discovered the indicators of media that can better explain the category, which formed the codes consist of needs and advantages of e-module, technical ability, e-module feature and strategy.

“There is a detailed guide to help prepare the instructor in teaching” S1

“Easy to understand, but if you are not use to using computer or application in school setting, you need to practice so you don't have a technical issue when using it” S4

“No need for other materials outside of what has been prepared in e-module, material prepared was very detailed” S3

“The clear steps allow the instructor to bring students to understand the material being taught quickly and also encourage students to use metacognitive skills in training.” S2

Secondly the indicators of content which formed the codes, consist of latest material content, additional material and according to industry.

“Materials has already been loaded with the latest knowledge, there are also various tools for analysing the skin” S1

“The material is easy to follow and track if you want to find additional information from the internet” S2

“The content of the materials is accordance to the today's industry need and demands” S3

Next “strategy” is represented by obstacle, superiority and teaching strategy.

“Technical problems that occurred only about the wifi, can easily be fixed with using mobile internet, but there is no guarantee that the zoom class wasn’t going to get stuck” S6

“It’s very flexible, because students don't have to come to the training place/school to take part in the training, so in general the overall cost for students are cheaper” S1

“The participants seemed to be more motivated, enthusiastic, actively asking questions, and rarely were late during the training” S2

Lastly, ‘student’s response’ was formed from the analysis, the code is training advice and solutions, training conditions and practical conditions.

"Overall the e-module is easy to use, accessible, but i have to practice to be able to use it flawlessly" S5
"Online facilities make it easier for me to learn, i can learn from home/office, as scheduled. Handbook are easily accessible at any time" S6
"When practice using Breakout Room and using consultation as well as analysis form, it added to my insight. The problem is when the lighting isn't perfect, you can barely see the classmate's face to be able to perform the consultation and analysis. It's easier and more convenient to do it face to face. Which is why it's good that they provide 2 days of asynchronous practice" S4

Table 5 - Code formed from interviewed repondents

Module	Indicators	Code	S1	S2	S3	S4	S5	S6
Media	Feasible, Practical, Effective	Needs and advantages of e-module	v	v	v		v	v
		Technical ability	v	v	v	v		
		E-module feature	v	v	v			v
		Strategy	v	v	v	v		
Content	Feasible, Practical, Effective	Latest material content	v	v	v	v	v	v
		Additional material		v			v	
		According to Industry	v	v	v	v	v	v
Strategy	Feasible, Practical, Effective	Obstacle		v				v
		Superiority	v	v	v	v	v	v
		Teaching strategy	v	v	v	v	v	v
Student's response	Feasible, Practical, Effective	Training advice and solutions				v	v	v
		Training conditions				v	v	v
		Practical conditions				v	v	v

5. Conclusion

The results described were based on semi-structured interviews at PIBI Surabaya Indonesia showed overall positive responses from students, observers and instructors. The objective of this study is to guide vocational instructors to design an e-module, but first, it has to prove that the steps taken to design the e-module are important, and the evaluation is to see if the module can be used and succeed in achieving the goal intended. From the instructor's point of view, it was concluded that the learning design developed using the DCM was very effective in identifying what an instructor or designer needed in creating/developing an e-module used in the learning/training. The steps in the DCM were very important in developing a lesson because each step assisted in design and development that provided insight and input to the instructor; it served as a suitable method for designing an e-module even for novice instructional designers.

Instructional design can be a difficult and laborious process. Even relatively short curricular units, such as a skin analysis class, require considerable planning and effort to achieve educational goals successfully. Based on the findings, it is recommended that instructors use the design developed for the skin analysis module in vocational training in the beauty field. So that the students can achieve competence (ASK), eighth employability skills, five dimensions of competence and twenty-first-century skills (critical thinking, creativity, collaboration and communication) with the right teaching strategy. Even though we still see a problem when using technology for final evaluation especially the practice test, because the instructor has to observe the step that learners take in completing the task using Zoom only and not in person. There is still a need for an adjustment to be made in that area, but with the advancement of technology in the future, instructors and students can both benefit from this programme. Further research is needed to develop more programmes in the health and beauty field, especially with the required twenty-first-century skills. It is also hoped that the descriptions in this article will encourage other instructors/designers in vocational training to further explore the use of the DCM for their training needs and also share practical research on what has worked or has not worked in their specific areas of expertise.

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