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Planning Psychology and Rehabilitation Elements in Curriculum for Special Need Student

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Abstract

When just a small number of courses are being addressed, the article shows that a simplified method may give sufficient data to associate current energy and best exercises that can be expanded affixed to, as well as critical areas that need to be improved. Furthermore, the core findings and best practices may be applied to any engineering education setting. The curriculum is a critical component in determining program results. It usually contains of modules and courses that must be connected together in order for students to achieve the necessary learning goals. The goal of this project is to investigate the imperial and abstract foundations of curricular-centered calculated planning, as well as how curricular planning and execution are reflected in instructional structures and student experiences. A learner survey, instructor convertion, and contented analysis were all utilized in this paper's study.

Keywords: Psychology and Rehabilitation, Best Perspective of Learners in practices, Special Education

Introduction

The topic of curriculum planning is discussed in this work. Pérez-Foguet et al., (2018) it concentrates on a Master's degree program in electricity that covers five primary topics. It concentrates on the Energy Economy module and the Satisfy Energy Urban and as well as the four courses that make up the module. The authors' key objectives are to determine the consistency of curricular design at the component stage, recognized applicable instructor’s approaches, and promote student-centered learning practices within the module. Their ultimate purpose is to discover industry standards and gather suggestions for calculated design and education in the field of engineering. These ideas and industry standards may be used in any engineering school settings.

Thürer et al. (2018) used the following research methodologies to reach this goal: a learners survey, moderately interviews with teachers, and core content analysis. These techniques are used to get a comprehensive grasp of the pedagogues used in the instruction and assessment of the component's courses. Following that, the article will explore the process of curriculum design and finest implementation based on the findings. To keep the range of this article as small as possible, the writers did not provide any conversations with working-class people. The findings in this research are based on the authors' previous, preliminary work (Hsu et al.,2018). This work, on the other hand, is based on a larger collection of database and gives more detailed findings.

Syllabus is a very important part of the university learning. It shows the college's regulations and course material, and it lays out the ativities goals. Syllabus gives people the chance to make any changes to the degree courses they want. Several more people inside and outside of the higher education institution also seem needed for a good instructional process to work well (Modieginyane et al., 2018; Lensing & Friedhoff, 2017). (2018). Many people have said that academic institutions need to work more closely with people who work in able to educate students skills that are related to the job market (Yang et al., 2018). An institute needs to enforce its mission and objectives, get certification for its programs, satisfy the requirements of relevant parties, be

consistent with its programs' activities and outcomes, and make sure its education is in line with the Bologna Procedure guidelines (Owston & York 2018).

Background

Croy et al., (2018) went on to say that the process of improving instruction encompasses both Instruction and Education process that meet the curricular goals throughout the whole system. In addition, (Liu et al., 2020) have proposed that syllabus is made up of linked programs that follow a teaching route; as a result, curricula must comprise instructional objectives, educational material, working techniques, and instructional methods. Lai et al., in addition (2021). Student achievement, it has been proposed, should be the basis for curriculum design. The planning process starts with a review of the current educational environment, followed by a list of planned modifications and outcomes. Effective curriculum design, like accredited certification requirements, institution norms, and programming histories, takes into account all of these factors.

Several researches have concentrated on the significant link among curriculum creation and student objectives (Trencher et al., 2000). (2018). the standard syllabus is made up of components and programs that are connected together just to achieve the best goals. When referring to the context of product planed for syllabus, Kim & (2019) use the term ‘calculated planning' to refered to the context of product design for education system, in which each planned from the beginning is anticipated to be part of a broader whole which lasted at least for a prolonged period of time and contains every one of the classroom instruction done as part of phase. He believes that new advancements in current fields and emergent areas of study should be reflected in the structuring of education and training goals, with tighter ties among related or complementing fields. This, he says, would need to have a more open approach to personnel administration, assessment and financing standards, instruction, courses, and investigation.

Biggs (2003) contends that a 'positive and productive synchronization' strategy is required to integrate all aspects of the educational environment so that they will be appropriately linked. Coursework and its desired outcomes, process approach, and formative assessments are all included as components of an instructional program that must be linked with classroom instruction, according to him. Montecinos et al., (2018) tested whether society and constructively learning techniques may improve students' learning results. Such instructional methods may assist higher-level learning (Hsu et al., 2018); similarly, Miranda et al., (2021), feel that successful learning interactions should be better incorporated into the systemic curricula design phase. Include real concern exercises in the course material, such as dilemma learning, for illustration, to improve students' grasp of the particular subject and serious concerns (Servant-Miklos et al., 2021). Furthermore, Tejedor et al., (2018) have emphasized the necessity to redesign engineering education has the potential to include stakeholders professional expectations as well as academics product specifications into the curriculum development process. Servant-Miklos et al., for example, have highlighted how constructivist learning settings and knowledge construction increase learning (2021). Learners' formalized abilities are developed throughout their studies as they participate in program-related courses. Personalised programs wherefore playing a significant role in the development of understanding and work-related abilities.

(Liu et al., 2020) recommended employing core class’s assessment as a theoretical tool to analyze, defining, communicating, and creating degree programs comprehensible at the development of specific programs as well as the entire system. Pérez-Foguet et al., (2018) are working on a computer-assisted curriculum guide evaluation tool to aid in curricula preparation (Joshi et al., 2020). This tool will assist instructors in determining the educational results for their programs as well as collaborating with other program teachers. Pérez-Foguet et al., (2009) used student input in addition to the core curriculum analysis while building curricula (2018). Instructors have indeed been required to gather input the procedure is standardized, and educators are requested to give recommendations using same software application that they use to create their own curricular designs. At the conclusion of the each program, mostly tested in accordance data is gathered using standards or standardized forms. A field for general thoughts and views is also included on the forms, culminating in subjective evaluation results. Santos et al., (2019) looked at the surveys used in studies and found that there is a definite must to gather more learner’s feedback that may be utilized as existing research on instruction, studying, and evaluation.

The analysis results that such input provides may be utilized to enhance teaching standards, but he cautions that just gathering information will not lead to significant changes.

The Bolognese Headings produced external forces on universities to adopt students' achievement as the foundation for positive amount schemes and mechanisms for previous learning recognition (Pérez-Foguet & Lazzarini 2019; Tejedor et al., 2018). In the certification process, the results and learning objectives of a specific program are also highlighted. The certification procedure takes into account the standards set out in national law as well as those established by the university's management program (Pfluger et al., 2020).

The Process encouraged academic changes in which culminated in the adoption of a level educational structure comprises of both a Bachelor's and a Master's degree. As a consequence, electrical technology has been split into two distinct and autonomous parts: bachelor's and master's degree programs. Furthermore, learners must now finish their Bachelor's degree before commencing their Master's degree courses. The first wave of degree adjustments occurred shortly just after reform; nonetheless, the adjustments mostly consisted of reorganizing programs, with only a small amount of curriculum amendments or true reevaluate. A complete re-planning of all instruction and program material is part of the present, more significant reform. This has necessitated the development of comprehensive curricula plans for Bachelor's and Master's degree programs. The status and function of each and every semester in all of the programs is affected by the continuing curricula of bachelor's and master's degree programs. Pérez-Foguet and colleagues (2018). Previously developed programs and curricula systems are undergoing significant revisions. Several programs will be phased out, and their material will be incorporated into other, more complete courses. As a result, before the new Master's course of study in energy engineering takes effect, it's essential to explain the position and substance of the energy programs. When harmonizing current courses and creating the new revised curricula, it will be required to give a detailed analysis of the courses being taught in order to successfully enhance the education system (Subhash & Cudney et al., 2018).

Pérez-Foguet et al., (2018) added teaching modules (25 ECTS each) in their Master's degree program in energy engineering in 2018. Each module consisted of courses. In additional, ECTS of supplementary courses, including a Master's thesis, were included in curriculum (35 ECTS). Urban Energy Systems and Energy Economics are two of the five specialization choices (main topics) available in the program.

Methodology

Pérez-Foguet et al., (2018) It was critical to concentrate on a modules that supports a significant amount of student energy engineering learner in order to acknowledge and record the present instructional and curriculum design processes are just a part of education in engineering energy. Furthermore, while the Bachelor's and Master's degree programs' curricula was in its early phases, the Degree level courses were the most significant field for methodological investigation. The most prevalent subject in the study program in energy engineering is Urban Energy Systems and Energy Economics. Furthermore, the first Master's level module taken by UESEE specialization students has the same designation as the main (Economics in Energy and System Urban Energy, see Table 1).

The teaching module focused to give learner a basic overview of the dissimilar kinds of energy technologies used in environments, as well as urban power projects and urban planning, and how they are linked to energy marketing, planning of urban energy, investing energy, urban energy planning, district heating engineering, and models of system energy that are optimized at various levels. A strategy using three distinct methodologies and views was used to analyze the content and instruction in the composing the module cluster of courses. A learner's survey, instructor interviews, and core contented analysis were chosen as the three approaches; the methodologies provide light on student-centered, teacher-centered, and curricular perspectives on the subject, respectively.

These techniques produced both statistical and unstatistical data, as well as an in-depth knowledge of the instructional methods covered in this subject. The learner's survey gave statistical theory of learning challenges prior to learner attending the classes, whereas the conversations supplied statiscal information on the principles

of curriculum design. The study revealed how instructors evaluated the course' educational objectives and demands. The basic background for the interviews and surveys was set using this information. Antecedent's curriculum design materials were used to conduct the curricular analysis for courses. Many of these papers were created for Education Evaluation Council Higher Education re-audit (Pérez-Foguet et al., 2018). The evaluation of teaching and education. Also, Joshi et al., (2020) created a computer-aided tool that was used to create some of this content . Despite the fact that most of these materials were written with a 'core curriculum analysis' mindset in mind, the quality and depth of content differed significantly among courses. There were significant disparities in the degree of information when it came to the learning objectives in particular.

The purpose of the learner survey was to get a comprehensive example of learning taking modular. As a result, at the start of fall 2018 an example was taken in concurrently running programs. As a result, the example included a significant portion of the total learner population, and single surveys had only a little impact on the learner population throughout the survey. Various Learners were enrolled in both of the classes where the questionnaires were administered, and that they were only required to complete one questionnaire. The surveys were conducted at the commencement of the first presentations for the programs, when more than 95% of the leaners attending the courses the same year is present, in sequence achieving the level of participation.

Table 1. Energy Economical Energy and Urban Energy

PERIPHERAL SYSTEMS FOR COMMUNITIES ENERGY, SYSTEM OF ENERGY, AND ECONOMICAL ENERGY,	CURRICULUM POINTS
Representations and optimistic of Energy System	10
Sector of heating engineering	10
Marketing Energy	10
Communities System of Energy	10

The outcome of 90 replier which comprising the great representation example and Hundreds of learner was responded in the questionnaire.

Learners were told to evaluate a subset of their existing working-life competencies before revealing their hopes for enhancing those skills while finishing the curriculum. Prior to the start of the course, the poll queried students about their impressions of the specific knowledge and working-life competencies relating to their own module. Students were also polled on their preferred teaching techniques and expectations for acquiring module-specific knowledge. On a multiple scale, learners were told to rank their skills and ability: "Nothing" is the meaning of 2 1/2. "Basic level" is 3 1/2, "intermediate level" is 4 1/2, and "expert level" is 5 1/2. A detailed list of the characteristics used is included in the survey. (Table 2)

Table 2. List of working-life competencies and knowledge specific to the UESEE module used in the student questionnaire.

NONE COMPETENCY		UNDERSTANDING
01	Natural Science and Basic Math	Technology Conventions
02	Analytic expertise	Technology Renewable Energy
03	Solving Problem Expertise	Energy system in Model
04	Thinking Critically	Heating District System
05	Theoretical understanding	Investing Analytical and Counting Cost
06	Present data Understanding	Economical
07	Innovation	Coal, Oil, and Natural Gases in Global Energy
08	Entrepreneurship Basic expertise	Market Electric Nordic
09	Extrapolate Management	Policy Energy
10	Organization Expertise	Green House Effect Energy

11	classification responsibility	Sustainable Energy
12	Societal Expertise	Urban Planning In energy
13	International dealing in environment	Innovations in energy technology
14	Retrieval Expertise Info	
15	Speeches, Representative, and Expertise in negotiations	
16	Expertise with your best foreign language	
17	Writing Expert	
18	Lasting learning expertise	
19	Self Understanding	
20	Awareness in Ethics.	
21	Aware in Environment	
22	Aware in Sustainable	
23	Cycle of Life awareness	

The respondents in order to get detailed information regarding the module's program planning and execution phases. Only instructors in charge of the module's classes were accessible for assessments. One of the professors questioned, meanwhile, was in charge of establishing the module's coursework. The interviews took place during the summer of 2018 and focused on the present courses. They were performed in a moderately manner, with the respondent being guided by a list of 15 primary topics and questions. The instructors were obtained from the participants and questioned about smart goals, distribution of responsibilities, degrees of cooperation, evaluation, and documentation, among other elements of the program and curricular procedures in the modules. The information was not analyzed using a formal manner due to the minimal number of interviews conducted. Ultimately, the writers came to their views after having a reflective conversation.

Result

The applicable learner's survey and instructor interviewing were informed by the core analysis of the courses. It showed the interconnections between the information of been delivered and, as a result, is not whether the concepts of curricula were reflected in the subject being taught. The courses are generally separate and only related to each other in a parallel way, partly owing to the vast scope of the programs. The programs need not develop on each other; rather, each one focuses on a different aspect of electrical and electronic engineering that is not directly related to some other studies in the modules. The lone exception would be course 'Reproduction and Management of Power Systems,' which requires foreknowledge of the course 'Electricity Market.' As a result, there is only a constrained opportunity to expand on the activities and knowledge that students have gained through the module's earlier courses. The study also discovered that the courses' learning objectives were mostly defined in terms of fundamental engineering abilities, mathematical skills, and analytical expertise. There was extremely little substance and few objectives in terms of informal skills like collaboration and presenting abilities. Generally speaking, the analysis revealed that while the coursework clearly scheduled for the instruction of engineering skills, mathematical expertise, and analytical skills, the majority of skills related to 'professionalism' (e.g. leadership, public speaking, and social competence) were underestimated in the instructional planning and orientation procedure.

The conversations with the instructors revealed how the personnel perceives and implements the educational facilities they give in generally. In application, the findings are concerned with course preparation as well as teaching and assessment methodologies. The conversations were also essential for examining how curriculum preparation and execution are carried out in courses. The substance of the programs was chosen based on both the instructional requirements specified in the modules and curricular, as well as the preferences of the relevant personnel, according to the interviewees. The selections have been determined by the courses of existence supported tools at times. All in all, the observation of that curriculum-level teaching requirements have influenced course design. Nevertheless, the syllabus goals have not been specified in detail, and instructors have been given a lot of leeway in generating course material and selecting how the programs must be delivered. Furthermore, typical institution techniques like the following; lectures, exams, task, and sessions of exercises

were used to teach and evaluate the courses. Innovative or unique teaching methods were sometimes tried out, but never in a systematic way.

The surveys also indicated that now the strategic planning for courses was not very structured, and that cooperative preparation among instructors took place on a fairly sporadic and irregular base. Program evaluation was gathered consistently using a studying scheduling software application as well as via individual interaction with students, which was usually initiated by them. Nevertheless, the educator's use of courses evaluation was entirely up to them, there was no formalized approach of commencing with it. There is no other reliable source of feedback on the substance of the lessons. The findings of the learner's poll revealed more about how learner see them-self and the instruction they are getting. In considerations of how the curricula is created and executed, their professionalism and competence might be considered. As a result, their thoughts give a 'consumer' perspective on the training process and content. The poll findings reveal that students have distinct and consistent views regarding both the techniques markets' to be taught at a higher stage. As a outcome, they showed the least interest in the areas of 'districted heating systems,' 'economical, energy and greenhouse effect,' with percent of the learners wishing to learn 'none' or just a 'basic' degree of awareness on these subjects.

Ultimately, the module's core qualitative approach, educator's interviews, and learner's surveys indicated same effective exercises and evident areas for development. There are also evident and the substance of the education they are getting, according to the Sustainable Report 2018 (Pérez-Foguet et al., 2018). As a result, their opinions should be taken into account while creating course material and teaching techniques. The learners' backgrounds were diverse: 65 percent were enrolled in Finnish degree programs, 68 percent were working on a degree, and 65 percent were permanent learners. The remaining students were largely enrolled in degree programs and English degree programs, and they working 30 percent of a day. They do, however, reflect a group of learner's enrolled in courses.

'Project management', 'Cycle of Life awareness', and 'organization Expertise' were also mentioned as low-impact talents. Over 75% of learner's identified their ability level as intermediate or expert for the two highest-ranked talents. Similarly, more than 70% of students identified their competence as non-existent or basic for the two lowest-ranked competencies. The survey includes learners to assess their individual level of competency (see Table 2). The findings are shown in Figure 1, together with the average scores for each group derived using the scale. The learners demonstrated the greatest level of proficiency in basic natural sciences and math, 'Thinking Critically', 'societal expertise', and 'expertise in language', followed by 'group of work', 'solving problems abilities', and 'writing expertise'. They had the least level of competency in 'current research knowledge' and 'basic entrepreneurial abilities'.

'Environment consciousness and sustainability consciousness' were noted by nearly 60 percent of learner when asked what competencies they hope to gain or develop as a result of completing courses, as shown in Fig. 2. 'Applying Theoretical understanding,' 'Thinking Critically,' 'and existing research information,' and 'Cycle of Life assessment expertise' were the next most popular themes, in that order. 'Self-Understanding,' 'Natural Science and Basic Math,' 'Writing Expert,' 'Organization Expertise,' lasting learning expertise,' and' societal expertise' received the least engagement and anticipation. Although most of the reduced talents listed by learners were on the upper end of how they judged their own abilities, 'Thinking Critically expertise' earned a high degree of acttentiveness despite being among the abilities in which students were already most proficient. Furthermore, students not only lacked 'leadership qualities,' but also showed little enthusiasm in developing them.

Learners demonstrated a substantial connection (0.78) among their previous knowledge with the approaches and their desire for the same ways to be utilized in the future when asked about their choices for program approaches methods (Fig. 3). While the techniques they utilized in the early stages of their academics (giving a lecture, assignments) garnered widespread support (>65 percent want them to be employed), novel and seldom used techniques (such as reading groups and maintaining lecture diaries) obtained low acceptance ratings (15%). The clear exclusions were field excursions, which learners reported a strong interest in (60%), despite the fact that only 40% ever has gone on one. Additionally, students were unenthusiastic about regularly utilized

examinations (70%) and take-home homework (55%). (with 43 percent and 45 percent of learners want to used , respectively). While paper writing is also often utilized in classes (38%), students voiced substantial opposition to its usage as a method of instruction: just 15% desired its use.

Learners' desire to be exposure to high levels of understanding is evident in the findings (see Fig. 4). According to a survey of 90% of students, 'renewable power generation' was the most sought-after learning classification, with a desire for this academic subject at an intermediate or specialist stage in the classroom. After that, 75%–77% of learners said they wanted "innovative technologies in power generation," as well as "global energy needs to increase education and research on climate change, energy efficiency and energy production, as well as the sustainable management of natural resources" (Pérez-Foguet et al.,2018). In light of this, we'll go through some of the top recommendations in next section.

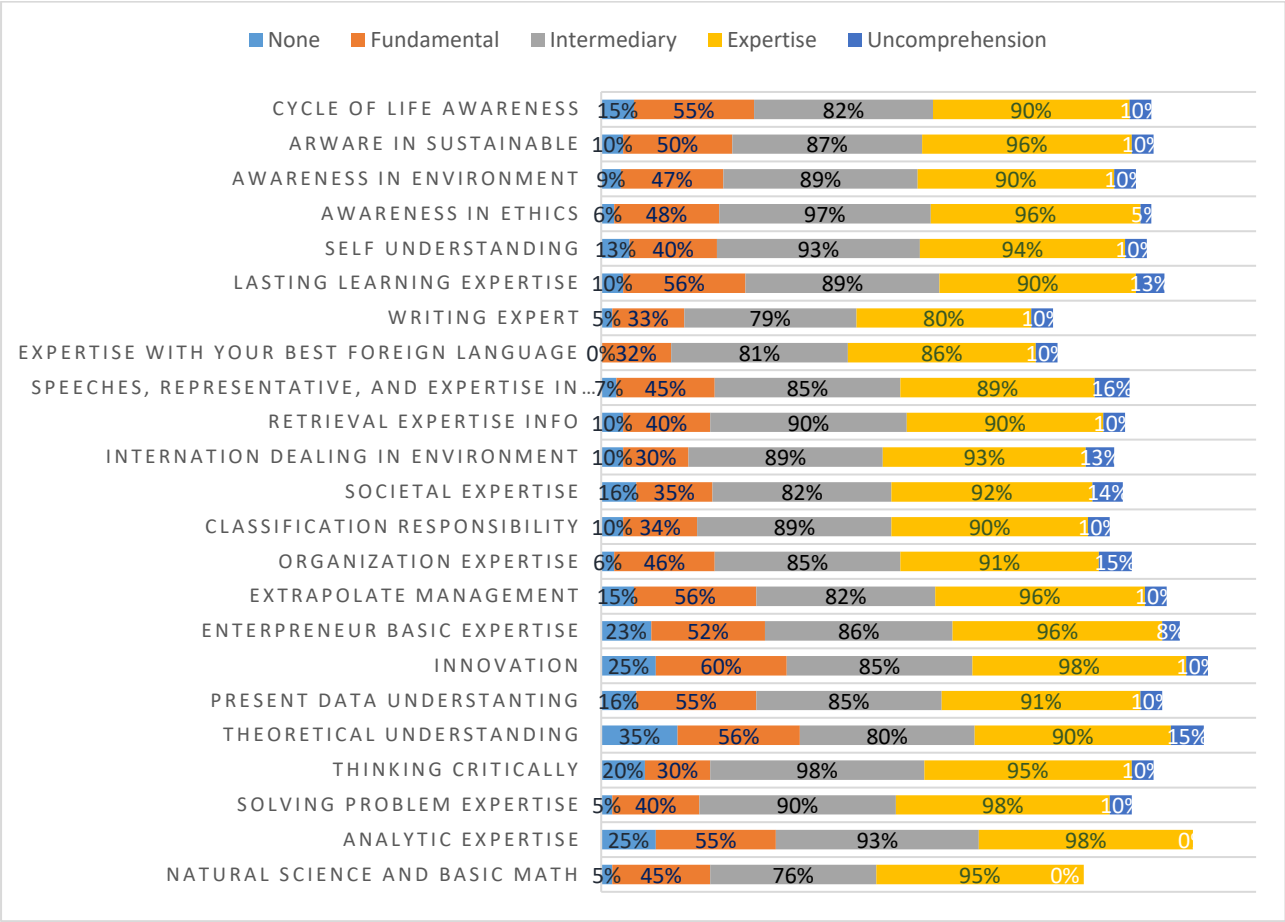

Fig. 1. Learners approximate of their own level of competencies.

Recommendations

The management and development of education should be consistent with the institution's strategy, which strives to establish high-quality educational experiences that satisfy the demands of society. Even though the complete higher transformation will be planned throughout the curriculum development phase, the actual activities should occur at the modules and program levels. Strategic efforts are required to align the university's objectives with those of the rest of the program, while also comprehensively enhancing existing courses or developing new ones, while having taken stockholder needs into consideration and making sure that learners acquire the skills they will need in their career prospects. Numerous past studies indicate that this will be a difficult endeavor (Subhash & Cudney et al., 2018).

Some universities use corporate strategy curriculum design (Owston & York 2018), which is a way to make sure that education exercises are all in line with the Institution long-term goals. It's important to pay special attention

to learning outcomes, which are the main parts of core content analysis and curriculum planning (Lai et al., 2021).

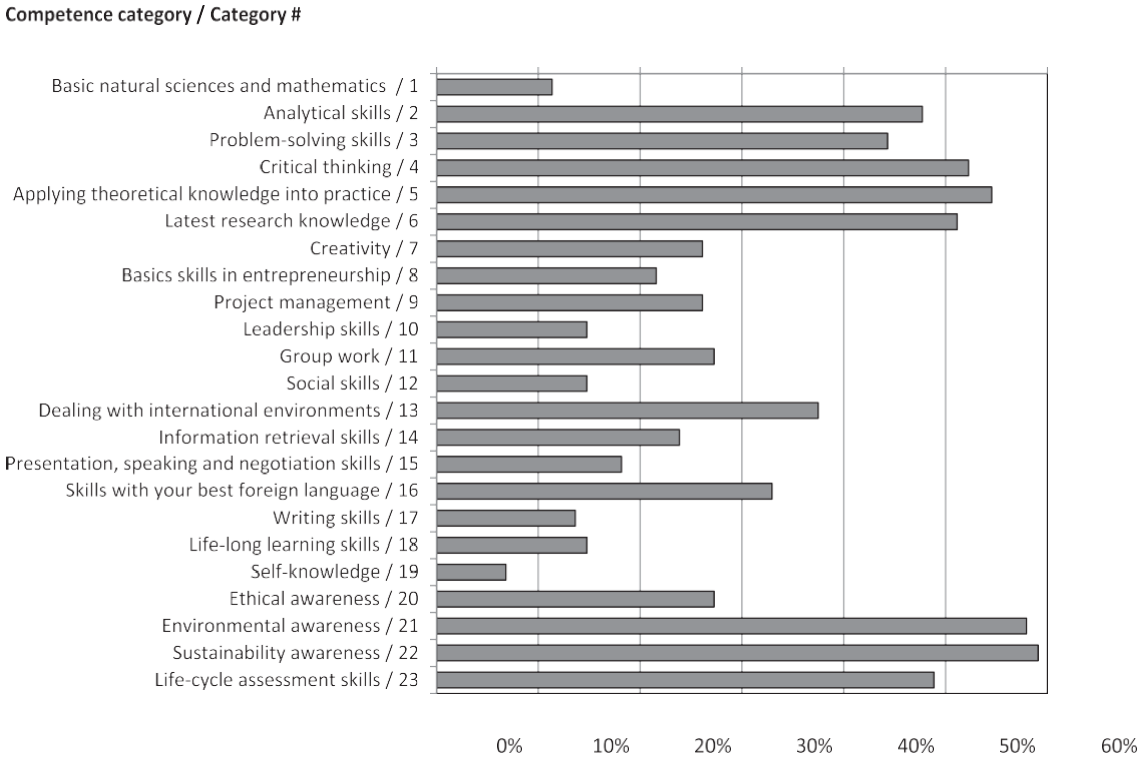

Fig. 2. Percentile of learners expected to obtain or improving the listing ccapability through attended

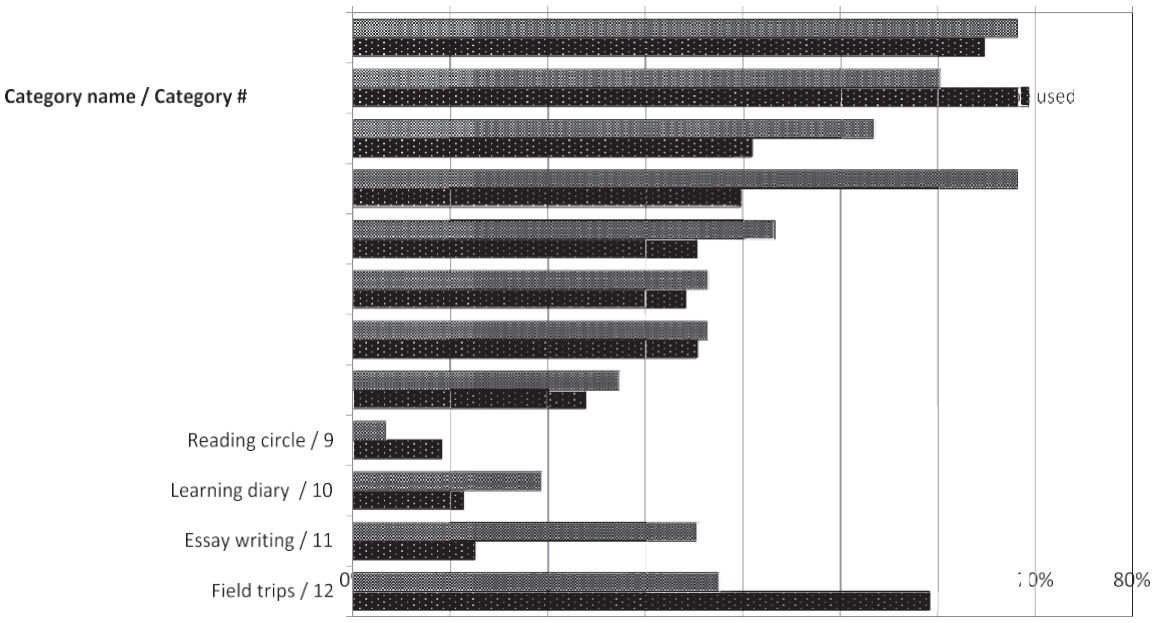

Fig. 3. Percentile of Instruction and assessment data that learner have had earlier practiced.

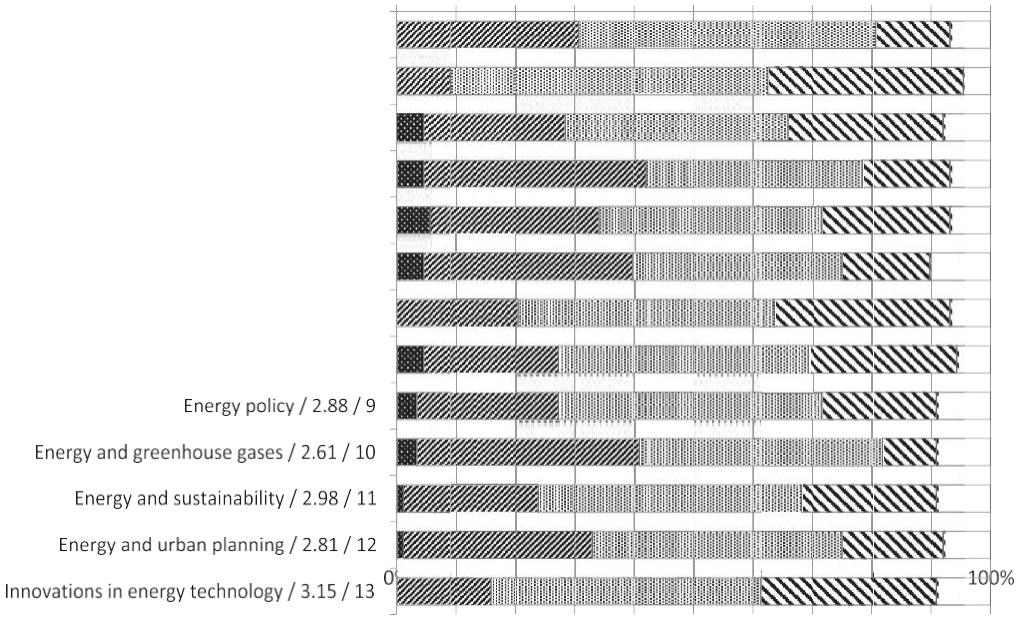

Figure 4. Learner's choices in the stage of understanding that wanting to be uncover to module.

Perez-Foguet et al.,(2018) qualitative approach is already familiar to the personnel of the Energy Technology (Joshi et al., 2020). Thus, writers highly propose the adoption of strategical curricular design or any institution where focus is placed on general synchronization of instruction (Pérez-Foguet et al., 2018) Varoius of learners participated in class if instructors adopt teaching approaches that are appropriate for the topic being taught and accommodate a variety of students types (Han & Ellis 2019). It is essential that the course's content and teaching methods be updated to keep pace with the changing world of business, society, and scientific research.(Wang and coworkers, 2021). Pérez-Foguet et al. (2018) have a good basis in offering current, study instructional material as an analysis institution. Learners a nd this in-house experiment appealing, and it should be used more broadly. While the contents of a program may be influenced by society today increasing demands and working conditions, particular instructors have great control over this. This necessitates the development and implementation of methodical and community college methods to guarantee up-to-date instruction. The use of organizational or critical discourse, for example, was recommended to bring university education nearer to the demands of working life. Any institution that wants to improve its relationship with practitioners should consider implementing this or a comparable strategy (Pérez-Foguet et al., 2018).

Most of all the writer's strongly recommended introducing the entire body, where in learners respond will be systematized proceeding and utilized the developmental curriculum Part of Institutions that lacks such body should considered its introduction as well (Pérez-Foguet et al., 2018). Pérez et al., (2018) While many institutions, including, have a common practice of gathering feedback from students, how this information is used is very much up to the instructor. This data should be used consistently to update instructional procedures, since learner's feedback gives vital insight into the educational programs' quality (Santos et al., 2019). For instance, after each course, feedback might be reviewed by a group of experts, and the resultant conclusions may be sent to the relevant management and instructor of the course. Additionally, surveys and talks focusing on current requirements in terms of infrastructure investment of life working might be utilized to supplement the feedback data (Yang et al., 2018).

People from different parts of the institution (administration, Educators, supervisors) need to work together to plan the curriculum at every step of the way. Mondieginyane et al. (2018); Lensing and Friedhoff (2018) (2018).. This also appears to apply to the course work that are part of both the configurations and the modules that are part of something like the degree programs, because they should be the same length. Perez-Foguet et al.,(2018) say that People from different departments have been able to plan together before, but that hasn't

been completed in a systematic manner. In fact, there really are obvious indications that a much more formal process to mutual collaboration has been used as part of the ongoing reform of Bachelor's and Master's degree programs in the Netherlands. Pérez-Foguet et al. (2018) also gave some staff members a chance to learn about how to be better teachers. People like Cincera et al. (2018) can learn how to plan a well-thought out syllabus and program in this way. All of this shows that collaborative planning is going in a very good direction, one that will lead to the aligned degree plans. Thus, the writers (Pérez-Foguet et al., 2018) say that the syllabus should keep building on this collaborative efforts. There should be a considerable attention paid to bringing new teaching methods, like problem-based learning, early on in the degree programs, so that the more conservative learner can get used to these new styles of teaching.

Since a complementary teaching strategy, researchers recommend that student projects include problem-based learning, as this kind of learning facilitates the incorporation of sustainability concepts into the curricula Thürer et al (2018). To facilitate a more comprehensive integration of sustainability concerns, (Pérez-Foguet et al., 2018) advocate the use of a teacher's handbook to encourage and assist instructors in integrating sustainable development-related material into curriculum. In general, a premium should be put on students' interest in sustainability and environmental concerns. Even though these subjects are covered in certain programs, energy engineering students have a legitimate intention of learning more about them. However, as Feijoo et al. (2019) point out, successfully integrating sustainability information also necessitates the incorporation of balanced, synergistic, trans-disciplinary, and holistic viewpoints. As such, it is advised that such information, in addition to environmental and sustainability topics, be reinforced by the courses' core curriculum. This notion should also be strongly backed by the Energy department Engineering's professional development program. Vargas et al. (2019) discovered that a staff developmental activities may result in increased inclusion of sustainability elements in the curriculum. The authors propose (Pérez-Foguet et al., 2018) that schools implement such a guidebook to guarantee that sustainability-related information is included into their curricula. Similar techniques are recommended for any institution interested in incorporating sustainability material into its curricula.

Conclusion

However, a higher focus should be placed on keeping an active link to work-related demands and encouraging teacher participation in planning, at least at the Energy Technology. One way is to adapt the organizational or critical discourse, as recommended by, in conjunction with the methodical and frequent usage of work teams comprised of faculty and representation from professional life. Intuition degree at the highest level should be founded on a organized curriculum developed collaboratively by important people. One strategy for curriculum reform, as highlighted by Kim and Lim (2019), is to use strategic curriculum design, which analyzes the greater whole and always views courses and modules as components of the whole degree programme. Additionally, curriculum alignment is a critical part of strategic curricula, which starts with defining the degree program's learning goals, such as critical working-life competencies and degree-related information. (Pérez-Foguet et al., 2018), the significant modifications being undertaken for degree programs provided an ideal opportunity to examine current methods and update learning objectives. The discussions with instructors at the Department of Energy Technology on their preparation and instructing methods revealed that the staff is already familiar with certain guidelines address of strategy curricula (Pérez-Foguet et al., 2018).

According to the findings of the learners' survey, greater attention should be paid to their inherent interests and inclinations. Taking into consideration student desire in implementing theoretical knowledge in reality, getting up-to-date energy skills, and understanding about sustainability initiatives are examples of this. Furthermore, pupils tended to reject instructional approaches with which they had little prior experience. These findings might help enhance curriculum development and how planned educational improvements are implemented in courses and throughout the whole degree program. As a result, any changes in learning and teaching techniques must be carefully planned, and the use of different teaching methods must be implemented gradually across the curriculum. As a result, future research might concentrate on the reasons and background elements that influence students' choices.

The knowledge we gathered in this manner enabled us to determine both current strengths and excellent practices on which to build and critical areas in need of development. Additionally, the major findings and best practices may be used in any engineering degree scenario. Overall, the article revealed that a strong grasp of how to create and execute curricula at the module level may be gained via core content analysis, conversations, and learner surveys.

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