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ORIGINAL

Open to Better? Teachers' Perceptions of Curriculum Integration in the Erasmus Mundus PETaL Master's Degree

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ABSTRACT

Erasmus Mundus Joint Master's Degrees (EMJMD) offer a unique opportunity to jointly design and deliver an integrated curriculum of excellence in an international context. This study analyses the case of a Master's Degree specialised in Education: PETaL "Play, Education, Toys and Languages". This is the first EMJMD obtained by the University of Cordoba (Spain) within the framework of the Erasmus+ Program (2014-2020), in coordination with the Polytechnic Institute of Lisbon (Portugal) and Marmara University (Turkey). Through the design, validation and distribution of an online questionnaire, this research aims to examine teachers' opinions on the place of integration in their teaching, as well as on the level of interdisciplinarity in the programme based on Harden's model (2000). This pioneering course represents a favourable context in which to evaluate the "jointness" in the curriculum and other aspects of the teaching-learning process, little explored so far in this context. The results reveal that, foreseeably, the conditions for greater integration in the successive editions are in place. Thus, it is necessary to continue strengthening teaching coordination and the aspects leading to further curricular integration. The study also serves as a reflection on teaching practice and the possibilities for interdisciplinarity in postgraduate education.

Keywords INTEGRATED CURRICULUM, JOINT DEGREES, TEACHERS' PERCEPTIONS, ERASMUS MUNDUS, EMPLOYABILITY

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1 INTRODUCTION

Since the creation of the European Higher Education Area (EHEA) —which stems from the Bologna Declaration in 1999— the focus of European education policy has been placed on achieving quality and excellence in higher education for member countries. This is even more evident in the current scenario of health and economic crises, where the reinforcement of interdisciplinary training in accordance with market demands is key to improving employability. Therefore, elements linked to interdisciplinarity and flexibility in the curriculum become determining factors in achieving the initial objective: to achieve quality

teaching and learning in the European area so that it can be regarded as a model for higher education training among non-EU countries. Based on this perspective, this study focuses on the analysis of key aspects leading to integration and interdisciplinarity in the Erasmus Mundus Joint Master's Degrees (EMJMD), given their international prestige, as well as their potential to promote an integrated curriculum and comprehensive and interdisciplinary training of excellence.

In the context of this research, Spain leads University participation in the 2020 EMJMD call, where Spanish universities are present in 26 out of the total of 40 Master's degrees granted (64%). In the field concerned, Social Sciences and Humanities, there are 25 EMJMDs currently on offer. Among them, we highlight the Master's course under study in this paper: PETaL (Play, Education, Toys and Languages).[1] This programme is coordinated by the University of Cordoba (UCO, Spain) in consortium with two renowned institutions in the key fields of these studies (education and play): The Polytechnic Institute of Lisbon, Portugal (IPL) and Marmara University (MU) in Turkey.

The enhancement of employability, a priority area of the Europe 2020 Strategy (European Commission, 2019) and the learning experience in PETaL, is undoubtedly linked to the development of generic or transversal skills in the EMJMDs curricula. In fact, linguistic and intercultural skills, specific to PETaL, are considered cross-curricular and essential to successfully develop the future professional projects of students of any degree (EACEA, 2020, p. 4). This fact supports the implementation of this Master's, which brings together innovative fields such as games and toys by gathering them in the same educational setting and, simultaneously, highlighting the importance of language and culture in the teaching-learning process.

Indeed, by means of competency-based training promoted by the EHEA, the commitment to an integrated curriculum is gaining strength. Through this curriculum, which is the core of our analysis, significant learning is favoured, as well as an overall vision of learning over fragmented knowledge in the form of compartmentalised disciplines (González-Morga, 2017). In order to accomplish this proposed goal, the guiding principle of curriculum design must be the interdisciplinary approach, which is conceived as "an approach to curriculum integration that generates an understanding of themes and ideas that cut across disciplines and of the connections between different disciplines and their relationship to the real world. It normally emphasizes process and meaning rather than product and content by combining contents, theories, methodologies and perspectives from two or more disciplines." (IBE, 2021). Within the framework of the EMJMDs, the integrated curriculum is that which is desirable according to the European Commission (EC) guidelines. Hence, our main objective focuses on the analysis of interdisciplinarity and the assessment of curricular integration by PETaL's teaching staff.

Among the possible survey techniques, an online questionnaire has been selected as the most appropriate instrument for data collection. Thus, the research methodology follows a mixed approach; that is, quantitative based on the quantification of data for analysis and qualitative by interpreting the data beyond pure statistical treatment. By using this method-

[1] Link to the programme website: https://web.em-petal.eu/

ology, this study aims to examine in more detail two dimensions that have so far been little explored in the literature on EMJMDs. At this preliminary stage of the research, and in accordance with the objectives of the study and the changing context of the global health crisis, the population sample that answered the validated questionnaire was restricted to the faculty staff at the University of Cordoba (UCO, Spain). This was the first and only institution of the consortium to have completed face-to-face teaching under normal conditions at the time of the implementation of the instrument and prior to the pandemic situation (September 2019-February 2020).

In general terms, the first specific dimension of the study was to describe the profile of the UCO teaching staff taking part in the PETaL EMJMD (their training, degree of involvement in the curriculum design, mobility experiences, and language skills, among others). The second dimension consisted of exploring and identifying the perceptions of the teachers surveyed on the overall degree of integration and interdisciplinarity in PETaL, based on Harden's ladder model (2000), which conceptualizes integration at 11 levels. Moreover, by using this model, the research attempts to assess the signs of "jointness" that can be found on a pedagogical level for the first group of surveyed teachers (methodology, learning objectives, assessment and degree of openness to dialogue and cooperation between teachers of different subject areas).

This exploratory research will serve as a pilot study and as a first approach to find out the perceptions of the present study group, in order to later implement the improved tool in the entire population and complement the results (faculty staff from the PETaL consortium, i.e., IPL and MU teachers). On the basis of this experience, appropriate changes will be made to optimise the data collection instrument and the specific objectives will be revisited in order to shed light on the most relevant similarities and differences in terms of curriculum integration between the institutions of the consortium. Based on the preliminary results of this study, further research can also explore whether there are factors linked to the teaching profile that may be indicators of the degree of integration in teaching, such as age (generally with some reluctance towards innovative practices) or their own interdisciplinary profile, among others.

2 JOINT DEGREES: EMJMD

The European Union (EU) Erasmus+ programme for education, training, youth and sport established for the period 2014-2020 integrates, among others, the Erasmus Mundus programme launched in 2004 and managed by the European Commission. Under this category we will examine the Erasmus Mundus Joint Master Degrees (EMJMD), which include a "high-level integrated international study programme of 60, 90 or 120 ECTS credits, delivered by an international consortium of HEIs from different countries and, where relevant, other educational and/or non-educational partners with specific expertise and interest in the study areas/professional domains covered by the joint programme (European Commission, 2020, p. 89).

Among the priority objectives of the EMJMDs we highlight the promotion of excellence, innovation and internationalisation in higher education institutions (HEI); the increase in the attractiveness of the European Higher Education Area (EHEA) and the reinforcement of the EU's external action in higher education. Furthermore, EMJMDs aim to improve the level of competences and skills of their graduates as well as their employability. In fact, according to the most recent official data on labour market insertion from the annual Erasmus Mundus "Graduate Impact Survey" (Terzieva & Unger, 2018), 85% of respondents found a job in the first six months after completing their studies, usually related to their training and with a strong international character (pp. 4–5).

The nature of these programmes and their associated benefits underlines their significant educational and institutional value in the European postgraduate scenario. However, there are a number of obstacles that have led to a decrease in the number of granted programmes and applicant institutions. Foremost among these are the low interest of many countries and universities in the huge and complex bureaucracy, the absence of local incentives, the legal and regulatory obstacles and the lack of consensus for common evaluation procedures, among others (EACEA, 2020, pp. 7–8; Zygierewicz, 2016, pp. 206–207).

On the other hand, in addition to their academic content of excellence and methodology, EMJMDs highlight their potential to acquire a high level of "jointness" in the design and structure of their programmes, which is essential to achieve the desired goals by the end of the decade. As the European Commission (2020) states: "EMJMDs are expected to have set up a jointly designed and fully integrated academic curriculum (...)" (p. 89). Nevertheless, the particular attribute of "jointness" seems to be confusing and participants have called for a more precise definition in order to understand and overcome the obstacles of this added value, which generally refers to the common processes of institutions related to the implementation, management, evaluation or recognition of the degree (EU, 2019, p. 5) in official EU publications.

Therefore, we argue for the need to analyse integration with explicit reference to the curriculum, all the more necessary in view of the apparent limitations expressed by the students participating in the most recent Graduate Impact Surveys. In them, answers on joint aspects in EMJMDs (*jointness of course content, teaching methods, design and structure*), included for the first time in the 2017 survey, are slightly less satisfactory than other items in surveys over recent years. Thus, the need to assess integration in the curriculum regarding the content and its organisation, methodology, programme design, teaching coordination, etc. becomes visible given the scarcity of research on this area in the specific framework of EMJMDs.

Regardless of the recognition process and the number of diplomas awarded, EMJMDs should aim at setting up a joint degree based on an integrated study programme, so that jointness is not reduced to the establishment of "common implementation procedures" (European Commission, 2020, p. 89) in terms of management and administration: "following the Erasmus Mundus philosophy, whatever the final diploma delivered, the consortium should implement a jointly planned and developed programme, including a strong integration of both curricula and organisation" (JOIMAN, 2010, p. 6). Furthermore, although

HEIs may choose to set up a joint or multiple degree, European Commission guidelines (2020) are clear in their recommendation for joint degrees to represent full and genuine integration of the teaching-learning process: "If national legislation allows, joint degrees are encouraged, as they represent a full integration of the learning and teaching process" (p. 89). Therefore, we can highlight the development of innovative international education, curricula and mobility experiences, the enhancement of employability, and the offer of courses which complement partners' curricula as being some of the most significant added values of joint programmes (YERUN, 2018, p. 8).

In the following section we will address the notion of an integrated curriculum and then describe our proposal for the assessment of integration in the PETaL programme: Harden's integration ladder (2000).

3 APPROACH TO AN INTEGRATED CURRICULUM

While the concept of an integrated curriculum has been promoted with enthusiasm in the academic context since the late 20^{th} century, this phenomenon has been linked to a confusing array of terms used interchangeably even now: "interdisciplinary", "transdisciplinary" or "thematic" curriculum (Fu & Sibert, 2017; Hough & Clair, 1995; Humphreys, Post, & Ellis, 1981). In the framework of this research, we will provide a theoretical approach that will shed light on this innovative model and allow us to identify the most significant aspects within the context of this study.

Mainly since the 1970s, there has been a remarkable effort to reconnect disciplines while advocating an interdisciplinary model that is against the excessive specialization and fragmentation that has traditionally characterised academic and knowledge organisation (Repko et al., 2019, pp. 35-37). Consequently, an integrated curriculum is unequivocally supported by an interdisciplinary approach. Hence "interdisciplinary curriculum" (Holley, 2017; Jacobs, 1989) is a regular synonym in this context, used as "a holistic approach that links the disciplines by emphasizing relationships and connections" (Jacobs, 1989, as cited in Smith & Karr-Kidwell, 2000, p. 2). In short, the final aim is to broaden the view that a single subject offers in order to address the complex problems of today's societies from complementary perspectives.

D'Hainaut (1986) reports on the use of the term "curriculum integration" from the UNESCO-sponsored symposium in 1981 on interdisciplinarity as a core action in education and an integrated curriculum: "... integrated curriculum involves organisation of the content and the teaching-learning process around themes or activities or problems or processes which require interdisciplinary learning" (APEID, 1982**,** as cited in D'Hainaut, 1986, p. 11). Furthermore, D'Hainaut (1986) warns against the misconception of curriculum integration being reduced to the mere combination of subjects: "There should be no misconception, however, that mere combination of sub- ject matters will automatically guarantee the integration of learning experiences within the learner. The aim of curriculum integration lies in integration of learn- ing experiences which are real and meaningful to the learner." (APEID, 1982, p. 10).

Since then, the integrated curriculum has been consolidated as an object of study and discussion until today. In a general sense, the integrated curriculum is defined as one that transcends disciplinary boundaries and is articulated around general themes or issues common to the disciplines involved (Cifuentes-Goodbody & Harding, 2016). This configuration, closer to the students' experiences, allows them to build "a rich web of connected knowledge that better equips them to deal with real-world problems" (Cifuentes-Goodbody & Harding, 2016, p. 5). It is actually the close connection with real problems that seems to be a source of motivation for students, thus achieving more meaningful learning levels (Barnes, 2015; Sáez & Sancho, 2017). Among other benefits derived from interdisciplinary and integrated learning, the most notable are the development of key skills demanded by employers and crucial in the global market of the future (Everett, 2016), a learning experience where students better assimilate multidimensional concepts from different perspectives and a potential improvement in academic performance (Lowe, 2017, p. 71). With respect to the teaching staff, adopting an integrated approach leads to reflection and evaluation of teachers' pedagogy and encourages communication between colleagues from different subject areas, in favour of joint curriculum planning and team teaching. Although they often show a positive attitude towards curricular integration in preference to the traditional approach (Lowe, 2017, p. 80), they may be reluctant in practice, presumably due to their limited knowledge of the approach and its process, and the degree of extra commitment, together with the lack of institutional support and internal training (Hafeez, Jamil, & Khan, 2021; Park, 2008). These are some of the factors that hinder the implementation of more widespread integrated curriculum practices.

This approach to the concept and practice of integrated curricula reaffirms their position in line with European guidelines that support student-centered teaching, and its capability to facilitate meaningful lifelong learning and training in skills required for future professional performance (Rodríguez-Learte et al., 2018). However, we must be aware that integration is a complex process that can take many forms and should be presented as a flexible and scalable option within each training programme according to the resources available and the proposed learning objectives (Gresnigt et al., 2014, p. 52).

In order to illustrate the possibilities of integration and its conceptual reference, we will provide a description of the model used as a basis for the design of the data collection instrument. We refer to Harden's model (2000), which has served as a guide for teaching reflection and curricular design in many studies (Gresnigt, 2018; Nhlapo et al., 2019; Zabalza, 2012, among others). It should be also noted that the efforts of the teaching staff and the institution's commitment to the initiative (in terms of time, funding, facilities, etc.) grow as the complexity of the type of integration increases (Gresnigt et al., 2014, pp. 73–74).

3.1 Progressive Curriculum Integration: Harden's Ladder Model

Most of the integrated curriculum models to date have been inspired by the works of authors such as Drake (1993); Fogarty (1991); Fogarty and Pete (2009); Jacobs (1989), and decisively influential relevant proposals such as that of Harden (2000). In these studies, integration is identified with a continuum where different levels are presented in ascending order (from

left to right in Figure 1): from a subject-centered intervention (discipline-specific) to a progressive transition leading to the integration of concepts, theories and procedures common to multiple disciplines (a group of integrated curricula corresponding to the multi-, inter- and transdisciplinary "MIT"[2] levels).

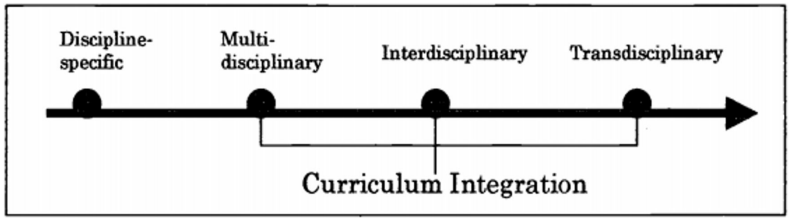

Figure 1 Bottom-up representation of basic levels of integration in integrated curriculum models. Source: Smith and Karr-Kidwell (2000, p. 44)

Based on the previous representation, this continuum is broken down into more or fewer phases according to the model analysed, thus indicating different degrees in search of the greatest integration. Following Harden's proposal (Harden, 2000), this author distinguishes eleven levels of curricular integration, distributed over the steps of a ladder that run from subject-based (lower steps) to integrated teaching and learning (upper steps). This model is divided into three sections: subject-based curricula (a), subject-based curricula with integrated activities (b) and integrated curricula (c).

Within group (a), composed of the lower levels (1-5), the curriculum focuses on independent subjects. At the first level (*isolation*), there is no connection between subjects, which is a characteristic stage of traditional non-integrated teaching (Rodríguez-Learte et al., 2018). At the second level (*awareness*), subjects continue to exist separately, but teachers are aware of the syllabus of other subjects. At the third level (*harmonization*), teachers show interest in consulting each other to learn about the programme and content of other subjects, even though they remain separate.

Level 4 (*inclusion*) is reached when teachers introduce content elements or skills from other subjects into their own teaching programme. This allows students to be aware of the application of such knowledge in various contexts. At step 5, time coordination takes place. Here the timetable is adjusted so that related content from two subjects is taught on the same day or in the same week.

In the middle of the ladder, we identify group (b), which consists of three levels (6-8), where the curriculum is still subject based, but includes integrated activities. From level 6 (*sharing or joint teaching*) results a unique teaching programme offered by two disciplines linked by their complementary nature. At level 7 (*correlation*), a separate integrated teaching session covering areas of common interest across subjects is introduced into the subject-

[2]"(…) we refer to multi-inter transdisciplinarity (…) as MIT disciplinarity, reflecting the fact that the terms represent progressive levels of integration within what may be considered a cohesive MIT framework" (Stock & Burton, 2011, p. 1093).

based curriculum. Finally, step 8 (*complementarity*) also includes subject-based and integrated teaching, unlike the latter which has equal or greater value than the former in the curriculum.

Lastly, we reach the final steps with group (c) and the strictest levels of integration (9-11). At level 9 (*multidisciplinarity*) a topic or problem is at the centre of learning, and this is dealt with through the lens of all disciplines. At level 10 (*interdisciplinarity*) interdisciplinary themes common to different subjects are studied and combined in a new course. On the highest step of the ladder, level 11, is found *transdisciplinarity*, where learning does not revolve around independent thematic units, but the teaching and learning process aims to represent a field of knowledge as it is in real life (Rodríguez-Learte et al., 2018, p. 218). According to the words of Marcén (2007), "the boundaries between the different disciplines have disappeared and students focus entirely on a new construct of knowledge that transcends them" (p. 224).

4 METHODOLOGY FOR ANALYSIS IN PETAL

The procedure for collecting data was through an online questionnaire that was sent to the PETaL teaching staff's email addresses, in order to find out their perceptions on the level of integration and interdisciplinarity in the framework of this study programme. Based on this general premise, the following research questions were derived:

1. Does PETaL foster an environment where several disciplines come together?
2. Are professionals involved in PETaL aware of the concept of interdisciplinarity and the differences between the associated terms: inter-, multi-, and transdisciplinarity?
3. Does PETaL's curriculum emphasise integration, moving from subject-based to an integrated curriculum (Harden, 2000)?
4. Do teachers in PETaL promote a more integrated curriculum (through methodology, learning activities, assessment, teamwork, etc.)

With the objective of answering these research questions in mind, we selected the survey technique for data collection in accordance with Buendía (1998, p. 120) and López-Gómez's considerations (2018, pp. 21-28). This research is, therefore, based on an instrument that is typical of the descriptive approach: a questionnaire designed to collect the most important data on the beliefs, experiences, opinions, etc. of the subjects of study (Colás, 1998, p. 178; Creswell & Creswell, 2017). In short, it is an exploratory study of a reality which has been scarcely analysed and for which a mixed research method was followed. The questionnaire is a quantitative tool that provides statistical data while it also includes open-response items subjected to an interpretative-qualitative analysis, conducted through content analysis following the Grounded Theory (Bryant & Charmaz, 2019; Charmaz, 2014). From this step, the categories and topics of the participants' discourse were successfully extracted.

It should be noted that the present study does not seek to make statistical generalisations of the results to the whole population, but rather to describe and analyse the general data

obtained, insofar as they are limited to representing the opinions of the academic staff from the first study group (UCO teachers).

4.1 Research Design

The process of designing and validating the questionnaire took place during the 2019-2020 academic year, corresponding to the first year of implementation of the PETaL Master's degree. Below, we detail the methodological procedure followed, which was divided into four phases:

1. **Phase 1:** Initial design of the questionnaire. In this stage, an exhaustive review of the most relevant literature related to the research topic was carried out, verifying the absence of an instrument aimed at assessing integration and interdisciplinarity in EMJMDs. In addition, the researchers agreed on key aspects of the process, e.g. the approval of the draft questionnaire and its translation into English according to the objectives and the study population, as well as the first contact in order to ensure the readiness of the partner institutions.
2. **Phase 2:** Preparation of the Delphi survey. A panel of external experts composed of 5 international experts in the key areas of this study (e.g., Master's programmes and University curriculua) was selected. The first version of the questionnaire was included in a Word document for validation using a Likert scale with values ranging from 1 (minimum level of agreement) to 4 (maximum level of agreement). The profile of the study participants and the work schedule were also defined.
3. **Phase 3:** Analysis of content validity (Delphi method). After acceptance by the judges, we sent the first version of the tool for evaluation. After a few weeks, the evaluations were collected, and the questionnaire was refined accordingly following their individual answers. The validation template and the updated questionnaire were then sent out in a second round, with changes in content and form included for final approval and formulation by the experts. Thus, consensus among the experts was achieved, which allowed the researchers to move on to the next phase.
4. **Phase 4:** Application of the final questionnaire to the study participants. The online questionnaire was distributed to the first study group that made up the sample, consisting of five lecturers from the UCO (Spain) who had completed face-to-face teaching in this first year. This exploratory research is intended to serve as a pilot study and as an initial approach, and will later be implemented to the entire population (faculty staff from the universities in the consortium teaching in PETaL), once their teaching period has ended in 2021. Based on this experience, we aim to incorporate the necessary changes to the instrument before distributing the survey to the other two study groups (IPL and MU teachers).

It is important to highlight the social and temporal context in which the design and distribution of the questionnaire took place (October 2019-November 2020) and the implications for the research, especially regarding the progressive implementation of the survey in the

three study groups (UCO, IPL and MU faculty, respectively). It is clear that the current global health crisis has had direct consequences for the development of the programme. Teaching was carried out in a virtual environment in the second semester in 2019-2020 (IPL) and the start of the third semester in the second year (2020-2021) was delayed until the spring term 2021 (MU).

4.2 Design of the Questionnaire

The final version of the questionnaire consists of two sections in the following order: (1) description of the profile of the academic staff with teaching responsibilities at PETaL and (2) analysis of the degree of integration in the programme based on Harden's model (2000). Google Forms was used for the distribution of the survey. The table below provides a detailed description of the operationalisation of the study dimensions and their indicators in the data collection tool (see Table 1):

Given the above table, the elements of this operationalisation matrix were recovered to create the questionnaire. In summary, the instrument is divided into 21 and 46 items in sections 1 and 2, respectively, comprising a total of 67 items. Most of these are closed questions (18+33=51), for which the respondent can only choose between responses that have been previously set (quantitative analysis). In addition, 16 open-ended questions (11 of which are optional) were included to give respondents the opportunity to expand on or justify their answers, providing qualitative, complementary, and relevant information for this research.

4.3 Instrument Validation Phase

The selection of experts was guided by the fulfilment of the following requirements: active PhD lecturers from national and international universities, with experience in undergraduate and postgraduate training, and in the design of training programmes or research in pedagogy. As a result, the universities to which the participants belong were the Pablo de Olavide University in Seville and the Autonomous University of Madrid (Spain) as well as the Universität Bremen (Germany). The validation process began in November 2019 and the second round of consultations was completed in early September 2020, with the subsequent updating of the questionnaire taking place in accordance with the judges' individual answers and suggestions.

Contact with the expert panel and collection of information were carried out in an interactive way. Access to the survey was enabled through a link that directed contributors to the questionnaire on the Google Forms tool. In addition, they received the validation template, developed to assess the suitability and relevance of the items. The experts indicated their ratings using a four-point Likert response scale: (1) "strongly disagree", (2) "disagree", (3) "agree" and (4) "strongly agree". A "Comments" section was also added to facilitate the inclusion of comments or suggestions for improvement.

Table 1 Operationalisation matrix of the data collection instrument. Source: Own elaboration

Section	Dimension	Main and first-level items	Range of items
1. RESPONDENTS' PROFILE	a) Personal data (4)	1. Gender	Q1 – Q4
		2. Age	
		3. PETaL partner institution	
		4. Nationality	
	b) Academic background (4)	5. University degree	Q5 – Q5.1.2.
		5.1. Additional academic studies (complementary to the first degree specialisation)	
	c) Teaching experience (3)	6. Years of teaching experience	Q6 – Q7
		6.1. Period(s) when most of the teaching experience has taken place	
		7. Current department and faculty	
	d) Linguistic skills and mobility experience (4)	8. Mother tongue	Q8 – Q9.1
		8.1. Command of foreign languages	
		9. Mobility experience	
		9.1. Types of mobility	
	e) Specific role and teaching in PETaL (3)	10. Field(s) of specialisation in PETaL	Q10 – Q11.1.
		11. Role(s) in PETaL	
		11.1. Courses taught	
	f) Collaboration in syllabus design and overall curriculum design (3)	11.1.2. Design of courses syllabus	Q11.1.2. – Q12.1.
		12. Collaboration in the overall PETaL curriculum	
		12.1. Degree of involvement in the PETaL curriculum	
2. ASSESSMENT OF INTEGRATION	g) Assessment of items specific to each integration level regarding teaching and the overall PETaL programme (42)	13.1. Isolation	Q13.1. – Q13.11.
		13.2. Awareness	
		13.3. Harmonization	
		13.4. Nesting	
		13.5. Temporal coordination	
		13.6. Sharing	
		13.7. Correlation	
		13.8. Complementary programme	
		13.9. Multidisciplinary	
		13.10. Interdisciplinary	
		13.11. Transdisciplinary	
	h) Overall assessment of the integration of both individual teaching and the overall programme (4)	14. Level of integration in PETaL teaching (Harden, 2000)	Q14 – Q15.1.
		15. Interdisciplinary level in PETaL on a general basis (MIT levels)	

4.4 Statistical Analysis of the Reliability of the Questionnaire

The statistical analysis of the data was performed using SPSS v. 22 for Macintosh. Cronbach's alpha indicates the magnitude of the covariance of the items (Morales, 1988) and the extent to which the construct is present in the items. This questionnaire gives a Cronbach's alpha value of 0.789 which, according to Oviedo and Campo-Arias (2005) and Kiliç, Moreeng, and Malebese (2016), indicates a high reliability index. This data is confirmed by MacDonald's Omega coefficient (0.825 in our study, see Table 2), which is, again, excellent, according to Hayes and Coutts (2017) and Sürücü and Maslakçi (2020), as it is between 0.70 and 0.90:

Table 2 Reliability scale

Scale Reliability Statistics				
	mean	sd	Cronbach's α	McDonald's ω
scale	2.33	0.260	0.798	0.825

Source: Own elaboration

5 RESULTS AND DISCUSSION

Below we report the results that contribute to answering the research questions: to explore and identify the level of integration and interdisciplinarity in the PETaL EMJMD according to the perceptions of the academic staff. Findings are presented in two sections, following the structure of the questionnaire: profile of the respondents (1) and assessment of integration in the teaching and in the PETaL programme on a general level (2) (Table 1).

6 PROFILE OF RESPONDENTS

The five respondents in this first study group (UCO) are mostly women (80%), aged between 31 and 39 (60%), plus a participant over 60 years old, all of them of Spanish nationality.

With regard to their academic training (item 5), four of the respondents are graduates in Psychology and a fifth in Translation and Interpreting. All of them declare that they have also completed second and third cycle study programmes (Master's and Doctorate) in Spanish universities, two in the same field of knowledge (Psychology), another two in Education and one took a second degree in English Studies plus a specialised course in Teacher Professional Development.

Regarding teaching experience (items 6 and 7), 80% of the respondents have between 6 and 14 years of experience and one confirms a practice of more than 20 years (from the 1980s to the present). The period in which most of the teaching is concentrated is between 2010 and 2020, therefore during the consolidation phase of the EHEA in the Spanish university system. Participants are assigned to the Department of Psychology (80%) and the Department of English and German Philologies (20%).

Regarding linguistic competence (item 8) and mobility (9), all participants have Spanish as their mother tongue. As for the command of foreign languages (8.1.), four of the five participants state that their second language is English with a B2 level or higher. One teacher also has a command of French at that level and two respondents reported knowing other languages, although without official certification or below B2. As far as mobility is concerned (9), 100% of the participants have had one or more experiences abroad during their professional career for teaching or research purposes, and one participated in the Erasmus programme during her university studies.

Focusing on their field of specialisation in PETaL and the subjects they teach (items 10-11), the respondents are specialised in one of the following areas: Early Childhood Education, Methodology, Play, toys and games, and Second Language Acquisition. According to two of the respondents (40%), their specialisations are both "Early Childhood Education" and "Play, toys and games". The distribution of subjects in the programme (11.1.) per teacher – where "P" stands for participant – is shown in Figure 2:

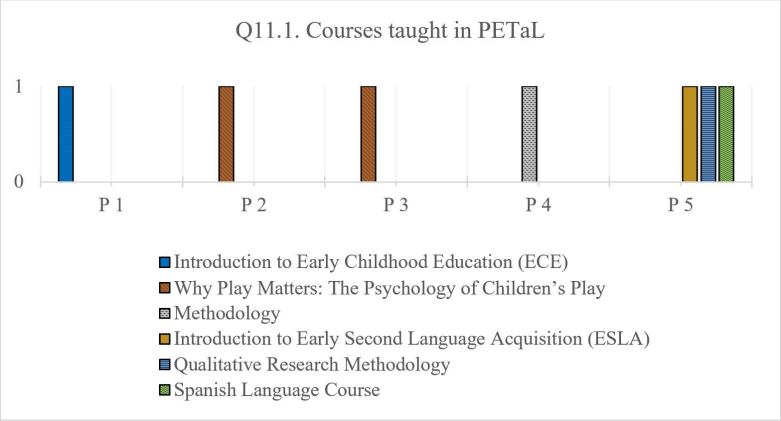

Figure 2 Distribution of subjects in PETaL for the first study group (academic staff at the UCO)

To conclude this first section, we evaluated the degree of responsibility and collaboration in the design of specific subject programmes, as well as in the curricular design of the general programme (11.1.2., 12, 12.1.). Three respondents reported being solely responsible for the syllabus design of their subject, one states that she is co-responsible (co-teaching a subject with other colleague), while the last respondent assumes both roles depending on the course since she teaches up to three subjects. Three of the five respondents (60%) confirm that they have collaborated in the planning and design of the overall PETaL curriculum (12 and 12.1). Among these, one respondent reports being solely responsible for its design while two are close collaborators, but without direct responsibility for curriculum planning.

6.1 Analysis of the Level of Integration in PETaL

In this second section we analyse the evaluation of characteristic elements of each integration phase according to Harden's model (2000, pp. 551–555), described above. We also examine the faculty's assessments of the integration in teaching according to their experience at PETaL, as well as the level of interdisciplinarity of the programme as a whole.

We start by examining the responses for the first five levels (Figure 3). The highest degree of consensus (80%, that is, four of the five participants) pertains to the following areas: joint teaching (1.A.); consideration of the connections between subjects and their intentional correlation (1.B. and 1.C.); involvement of the teaching staff in transmitting an integrated vision of the subjects (2.C.); joint programming according to the contents scheduled (5.A.); and explicit references to the links with other fields (3.B.). On this last point, it should be noted that 100% of those surveyed agree that the disciplines remain compartmentalised but confirm their effort to explicitly demonstrate the links.

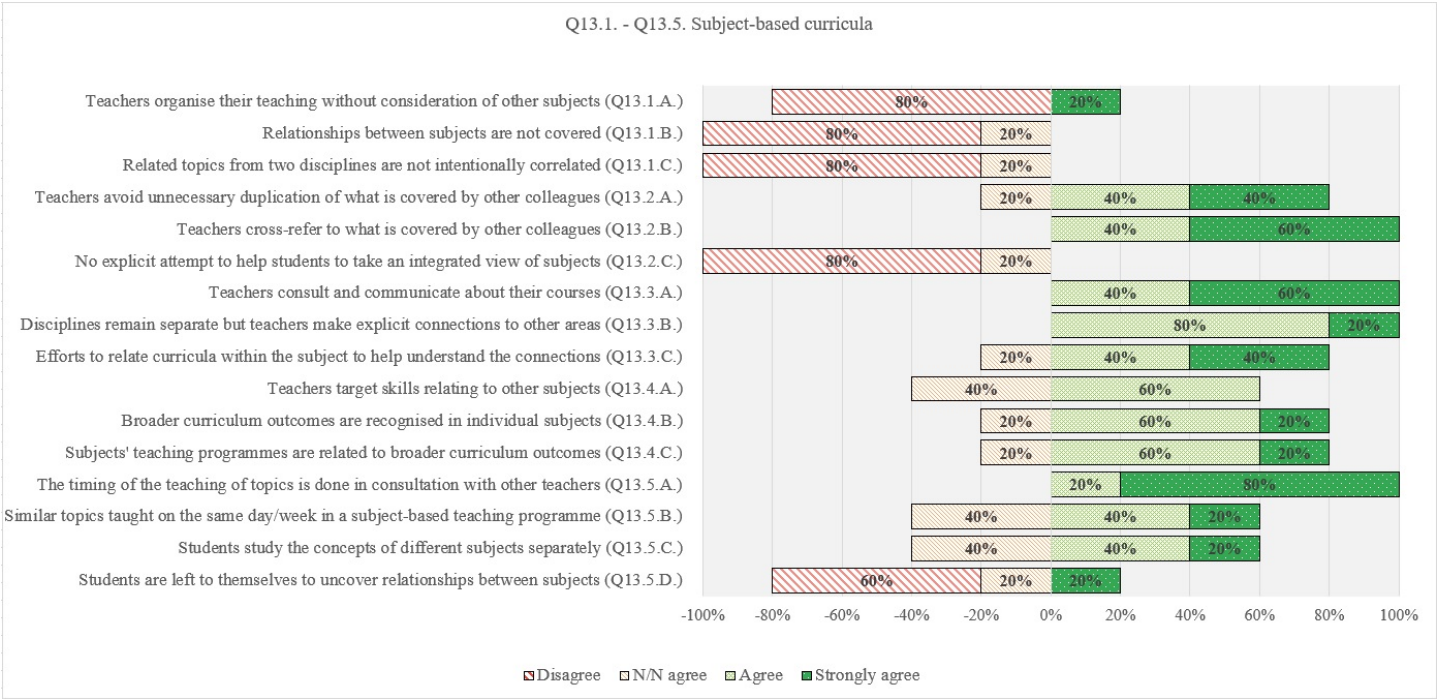

Figure 3 Assessment of integration in the PETaL EMJMD teaching (levels 1-5)

We continue with the analysis of the next three levels (6-8), corresponding to the "subject-based curriculum with integrated activities". In them, slightly different views are noted, probably because we are moving towards curricular models that are less commonly experienced in our system, and which require greater participation of teachers in the planning and discussion of the curriculum. According to the responses displayed in Figure 4, they are mostly positive ("agree" and "strongly agree") and neutral ("neither nor agree"). The items with the highest level of agreement are those relating to the recognition that the joint teaching of a subject by several specialists is more effective and efficient than individu-

ally (60% "strongly agree"), although one participant does not adopt a position in favour of or against this assessment (6.B.3.). There are signs of integrated teaching in the programme, through the use of concepts or themes common to several disciplines to organise teaching (6.A., 8.A.). Conversely, the "N/N agree" statements suggest a lack of accuracy in defining the nature of joint integrated teaching (7.A.), the existence of real integrated approach initiatives and if any, how they are shaped or their impact, for example, on student assessment (8.C.).

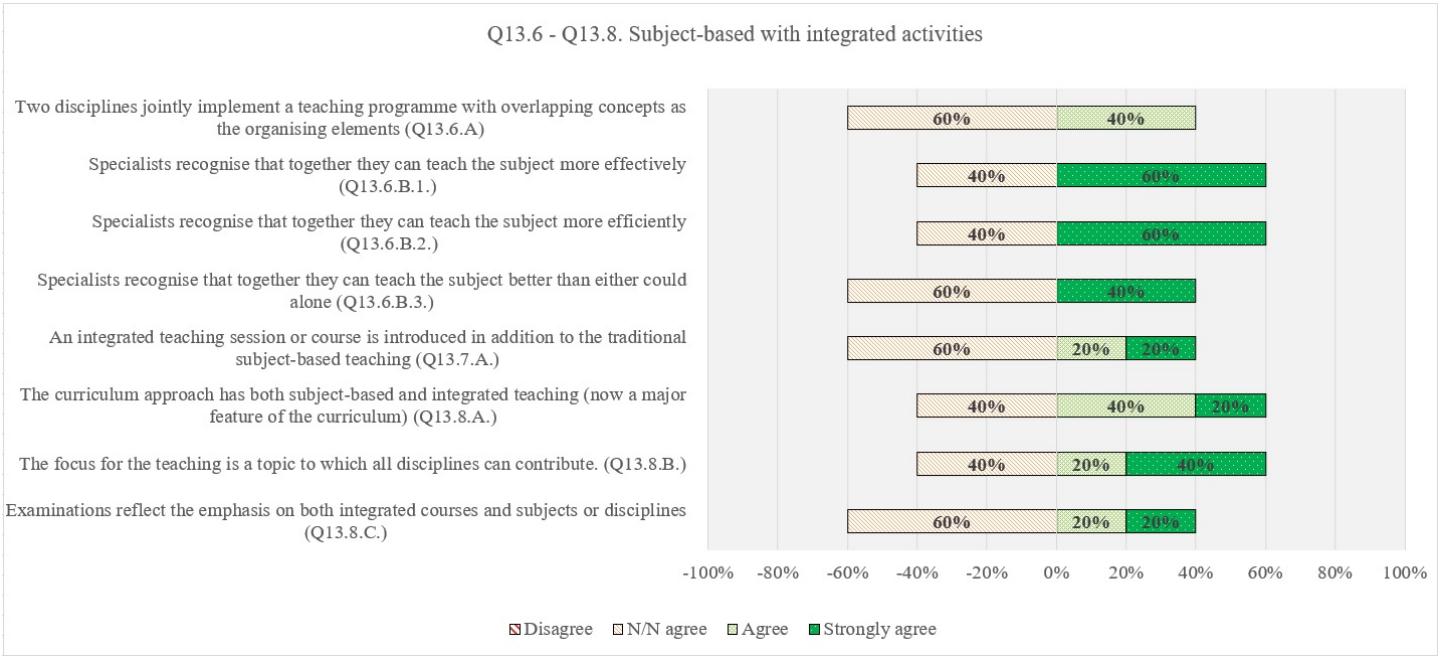

Figure 4 Assessment of integration in PETaL EMJMD teaching (levels 6-8)

Finally, the last three steps consist of integrated curricula (namely multi-, inter- and transdisciplinary levels), described as "authentic". With an emphasis on identifying PETaL at these stages, the results indicate 100% positive responses for the two items corresponding to "multidisciplinarity". As such, 60% of participants selected "strongly agree", and 40% agreed with statement 9.A., thus recognising that PETaL teaching is based on a multidisciplinary approach "which brings together a number of subject areas in a single course with themes, problems, topics or issues as the focus for the student's learning" (Harden, 2000, p. 554). This conception is linked to the reality in which the academic staff (80% of "agree" answers) provide teaching exclusively within the limits of their areas of specialisation (9.B.).

As the level of integration increases as one climbs the ladder, there is greater disparity in the responses provided (Figure 5). For item 10.B., 40% of participants disagreed and 20% were neutral (neither agree nor disagree), from which it follows that disciplinary boundaries are neither crossed nor blurred, and the different subjects retain their identity in the programme. At the last stage (*transdisciplinarity*), heterogeneity of opinions on teaching is observed, depending on how the participant rated the two previous stages. In fact, the two

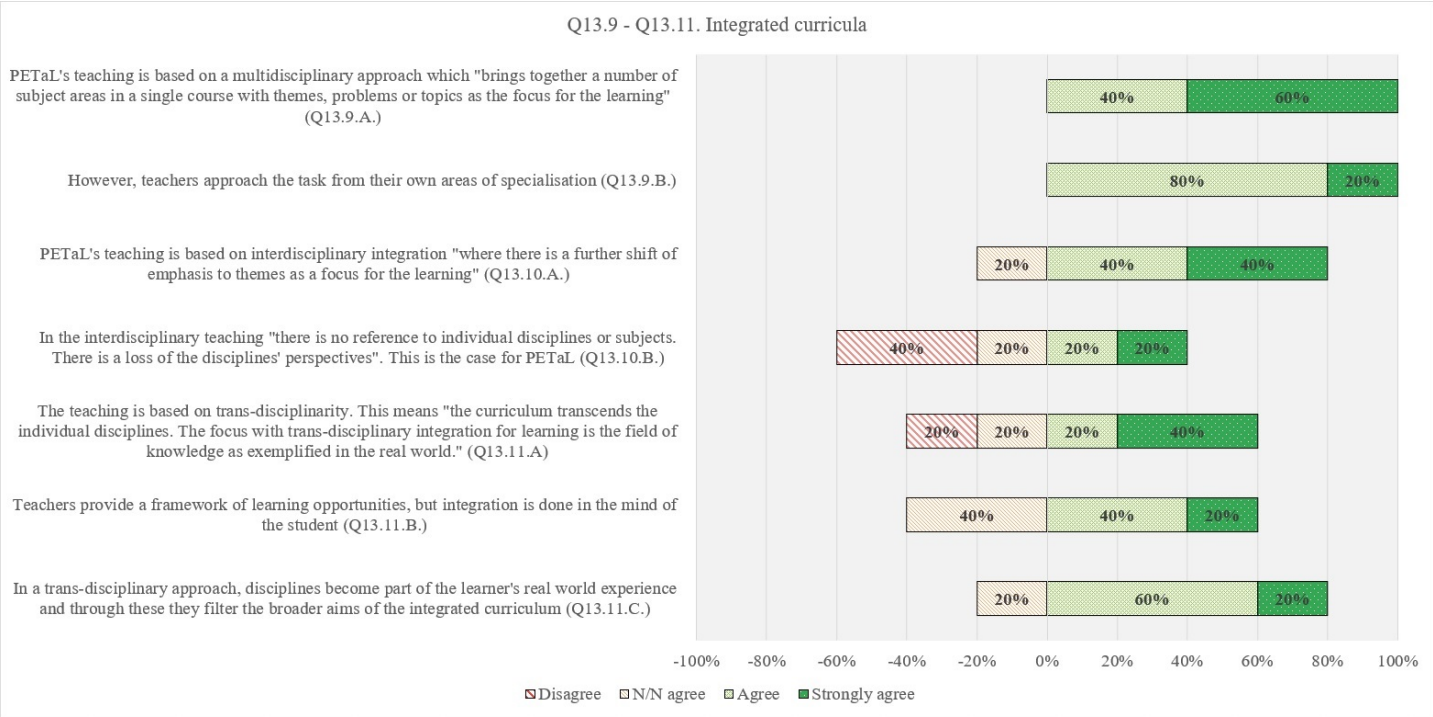

Figure 5 Assessment of integration in PETaL EMJMD teaching (levels 9-11)

respondents who claimed to be in strong agreement with transdisciplinarity also described teaching as both multi- and interdisciplinary, thus all values share the same intensity. This may be contradictory since the highest degree of integration (transdisciplinarity) in the curriculum must imply transformations (e.g., permeability between disciplines) which are considered to be non-existent in 60% of the answers.

On the other hand, although there is an effort to cover the connections between subjects (Q13.5.D.), we verify that students are the ones who must "activate" integration in their minds from the learning tools provided, according to 60% of the answers. Also 80% of the respondents agree with item 11.C., which could be explained by the applied nature of the curriculum; "disciplines become part of the learner's real-world experience (...)" (Harden, 2000, p. 555). This character proves the potential of PETaL in moving up the ladder towards greater integration in teaching and in course design. In conclusion, four out of the five participants reported that their teaching involves practices that mainly correspond to levels 9 and 10 (multi and interdisciplinary) as shown in Figure 6:

Although these stages appear to be of greater importance in the analysis, two of the respondents identify their teaching with lower levels; that is, "harmonization" and "temporal coordination and sharing". This complementary data provides meaningful results for the research, as it offers important clues on how more specific integration attempts are shaped in teaching practice. As mentioned above, the conceptual and practical complexity of the process and associated efforts means that actions on integrated curricula are generally reduced to these levels (Harden, 2000).

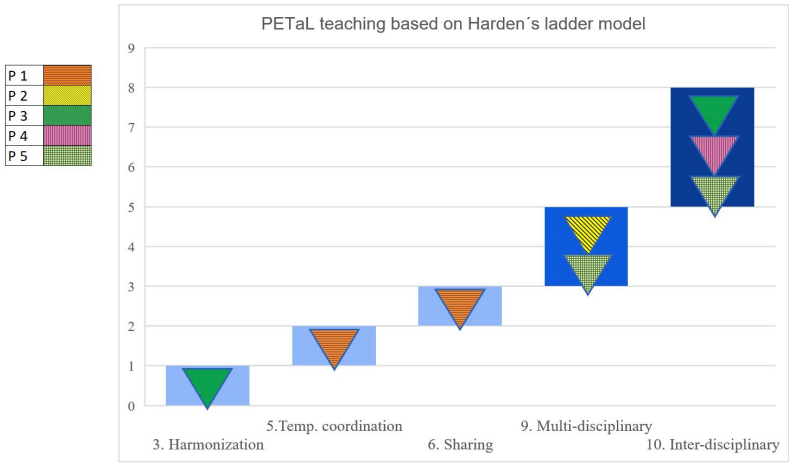

Figure 6 Assessment of integration in teaching per teacher based on Harden's model (2000)

Finally, in the overall evaluation of the programme, according to the most common scale of MIT integration levels (multi-, inter- and transdisciplinarity), the answers are distributed as follows:

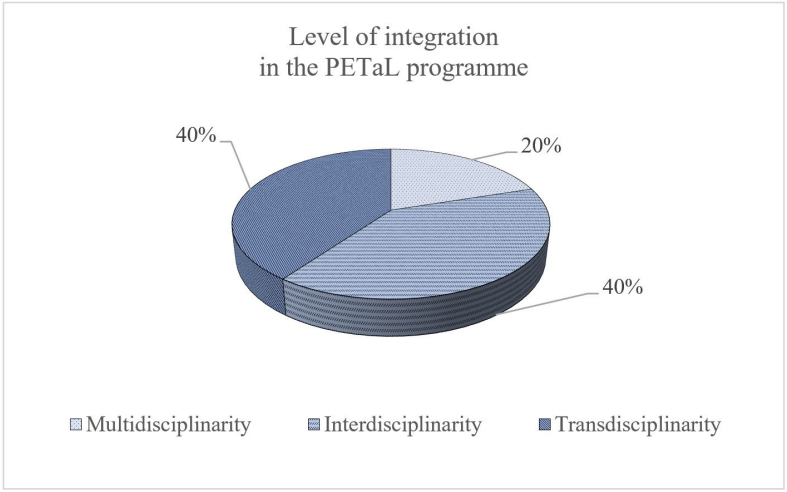

Figure 7 Overall assessment of the level of integration in PETaL

From the above figure as well as from the opinions expressed about integration in their teaching (Q14), the balance between interdisciplinarity and transdisciplinarity, which gains ground over multidisciplinarity (Figure 7), may seem at least surprising. However, when examining the statements of teachers in the open question (Q15.1.), we cannot find a sound reason to qualify PETaL as a transdisciplinary programme. On the contrary, arguments in favour of multi- and interdisciplinarity are consistent with the literature analysed and the level of integration recognised in teaching:

> (Interdisciplinarity - intermediate level) In my opinion, we have not had any coordination meetings that have allowed us to reach a deeper level of interdisciplinarity (...), while this depends on teachers' motivation and interest in coordination to avoid any overlap of content or to include others that could be complementary. In any case, I think that the [PETaL] teaching programmes are designed to encourage this aspect and as long as they are followed, good results will be achieved (I think that they have in fact been achieved).
>
> *(Participant 1)*

> (Multidisciplinarity - lowest level) Teachers try to connect the content of each subject, but it is necessary that subjects are more connected and integrated. It requires changes in the timetable, organization and evaluation.
>
> *(Participant 2)*

7 CONCLUSIONS

Integration (namely, *jointness*) is an essential feature of EMJMDs, but efforts have generally concentrated on finding the right label ("double"" or "joint") depending on the number of diplomas and the intensity of institutional collaboration. Instead, this research emphasises the need for further reflection on integration in curriculum design and its implementation in the classroom. Integrated learning should be the hallmark of a quality curriculum (Stabback, 2016, p. 23) and EMJMDs seem to meet the requirements necessary to encourage greater integration.

In the following paragraphs, we provide the conclusions derived from the research results for this first study group; namely, teachers from the University of Cordoba (Spain). The findings of the current study show evidence of the potential of the programme to foster collaboration between disciplines, of teachers' awareness (or the lack of it) about interdisciplinarity and associated terms, and of the "real" integration levels achieved by the most common initiatives being developed in the context of an EMJMD joint degree.

From the UCO teachers' perceptions, it is clear that PETaL favours a scenario in which different but complementary disciplines converge, thus illustrating the possibilities of interdisciplinary collaboration in EMJMDs. Thanks to PETaL's innovative approach, it is possible to provide graduates with a cross-curricular learning framework to address emerging social and market needs, although, according to D'Hainaut (APEID, 1982), the integration of learning experiences is not achieved by the mere "accumulation" or "coordination" of

subjects combined in space and time (p. 10). PETaL teachers at the UCO are aware of the opportunity to undertake teaching around common themes, but there are still signs of "moderate" integration, closer to the concept of "work in progress", a status frequently found in other joint programmes (Burquel et al., 2014, p. 85).

Integration is also seen as a complex and gradual process. The individual effort of every teacher (teaching programmes, pedagogical approach and learning activities) must be followed by a joint strategy that involves all agents (authorities, teachers, students) (Sáez & Sancho, 2017). We would like to stress the need for greater coordination and motivation of the teaching staff, as reported by one of the participants (P1). According to another respondent (P2), real integration requires organisational and methodological changes to optimise the innovative potential of the EMJMDs. Generally, consortia start with actions that are weakly linked but they represent the first step towards higher levels of integration. Proof of this are the stages in which several respondents place their teaching practice: "harmonization" (*communication and bringing together similar content*), "temporal coordination" (*similar content covered in parallel across courses*) and "sharing" (*joint teaching on similar topics occurs occasionally*). These positions show a willingness to reinforce integration between disciplines: either by programming the timetable to bring together related topics or by implementing a single programme with two complementary subjects. According to Harden (2000), programmes described as "integrated teaching" are generally, in practice, temporally coordinated (p. 553). Therefore, we frequently find examples that can be classified into these levels: "sharing" (González-Soltero, Rodríguez-Learte, Sánchez, & Gal, 2017) and "temporal coordination" (Pearson & Hubball, 2012; Shrivastava & Shrivastava, 2020).

On a general basis, respondents from the UCO place the PETaL programme in the upper-intermediate stages (inter- and transdisciplinary), though the latter lacks objective justification. In fact, MIT terms are often used indiscriminately, in line with the literature, even taking "transdisciplinarity" by default, with no reflection on the degree of integration associated (Stock & Burton, 2011, p. 1094). In addition, insufficient knowledge of the levels is detected, with elements that may be exclusive.

The complexity of the concepts involved is likely to hinder the understanding of the process and its implementation. This may explain the difficulty in providing evidence for assertions about their experiences in PETaL. Nevertheless, teachers agree on rating the programme's curriculum above the actual level of integration of their teaching, with most responses concentrated at the "multidisciplinary" level. Teaching in PETaL shows features typical of subject-based curricula, as subjects remain differentiated, while nuances of interdisciplinarity are observed since respondents report explicit efforts to connect them. The curriculum design would allow for greater integration, not always corresponding to the way in which teaching is organised and delivered, according to the results. Hence, our data confirm the lack of correspondence between intention and reality (interdisciplinary purpose, but rather multidisciplinary reality), as noted by Stock and Burton (2011, p. 1097) for this first group under study.

Although it is not always possible or advisable to reach the stage of integrated curricula where disciplines lose their identity completely, a working methodology that would benefit from the virtues of integrated learning may be considered, given the potential of the EMJMDs, even if disciplines remain separated in the curricular structure (Rodríguez-Learte et al., 2018).

All these results will be complemented by those provided in the next phase of the research, so that the hypotheses derived from the preliminary conclusions of the present study can be confirmed. Moreover, the data collection tool will be subject to further refinement and implemented to the entire population (PETaL teachers in the UCO-IPL-MU consortium) to support the trends observed here. Objectives will also be redefined to shed light on the impact of similarities and differences on curriculum integration among the faculty staff within this international consortium; namely, whether the variables relating to the staff's profile could be susceptible to influencing the level of integration of the programme or whether the conception and implementation of the interdisciplinary approach to curriculum planning and teaching may vary with culture, organisational issues, tradition in teamwork among teachers, etc. Thus, the present study is definitely a significant starting point to draw far-reaching conclusions that could be of interest and applicable to other international EMJMD contexts. Additionally, it would be very valuable to complement these results with students' perceptions on integration, which would help to provide a more holistic view of this phenomenon.

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