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Higher Education Faculty Perceptions and Needs on Neuroeducation in Teaching and Learning

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Abstract: Being a professor at the university is associated with the acquisition of sufficient domain knowledge and skills to teach. On the other hand, there is a constant need to update and strengthen teaching skills and contribute to an effective learning process. Neuroscience research provides evidence on facilitating factors to student engagement and lasting, durable learning. Toward the improvement of the learning quality in Higher Education, the development of an innovative didactic proposal based on neuroscience was undertaken. For that reason, a mixed research method was designed with the purpose of exploring instructors' opinions and practices. Participants were sixty academics from five Greek universities. Findings include the recognition of the validity and importance of neuroeducation training. It was also revealed that academics' theoretical declarations are not always aligned with teaching practice. Equally important is their need to deepen the comprehension of memory function for the enhancement of students' knowledge retention. Eventual misconceptions about the brain might be present, while not all employed pedagogical methods lead to desired student outcomes such as creativity and critical thinking. In addition, it is considered useful to apply alternative, creative and authentic assessment methods based on neuroscience evidence to increase students' interest and engagement.

Keywords: higher education; teaching; neuroscience; neuropedagogy; educational neuroscience; professional development; online learning

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1. Introduction

Neuroscience studies the function of the human brain [1]. Neuroscience research has implications for education, and these two areas have converged in a new field denominated "neuroeducation", "educational neuroscience", or "neuropedagogy" [2]. However, the growing interest in the education–brain relationship does not match the proper use of research findings. Indeed, the Organization for Economic Cooperation and Development (OECD) warned of misunderstandings about the brain among instructors, labeling them as neuromyths [3]. Neuromyths can be defined as "misconception[s] generated by a misunderstanding, a misreading, or a misquoting of scientifically established findings to make a case for use of brain research in education and other contexts" [4,5].

For example, many educators are aware of the importance of considering the learning style of students in instruction, as there are visual, auditory, and kinesthetic learners. However, this is one of the most popular neuromyth. There is a kernel of truth behind this neuromyth, as there are differences in students' preferences for learning and receiving information [4]. For instance, others prefer presentations, while others prefer lectures [6]. However, it is a fact that people learn to use multiple senses and not only one. The effectiveness of believing in the influence of learning styles in learning does not support by research results, as there are not any empirical data for this [7]. Students learn only if new

knowledge is "meaningfully processed, repeated and elaborated". Howard-Jones mentions that "if a person feels that they learn best by writing the content down in their own words, this is not because they then see what they have written down, but rather because writing something down in one's own words serves as an elaboration strategy" [3].

Another popular neuromyth is the one of the hemisphere's dominance. Most people believe that logic is located in the left hemisphere and creativity in the right hemisphere [8]. The kernel of truth behind this neuromyth is that there is a "hemispheric asymmetry" between the two hemispheres, and there are not completely identical from an anatomical or functional perspective [9]. Therefore, educators must consider whether learners are left- or right-brained in their teaching. Torrijos-Muelas et al. report that teachers who believe in this neuromyth, with 41.7% of references among studies, have the idea that every hemisphere works independently and has a different function [2]. Therefore, students' left hemisphere is responsible for intellectual, rational, verbal, and analytical thinking, while the right hemisphere is responsible for creative, intuitive, and non-verbal thought processes. They can organize the learning activities accordingly. However, we forget that the scientific results show that the corpus callosum links the two hemispheres in order to collaborate and process any needed mental tasks [10]. Instructors use a variety of learning strategies, but also the interest of our students, their motivation, activate attention, etc. [11]. Hemispheric dominance simply means that one of the two hemispheres is more strongly involved in a particular cognitive process than the other. The functions are lateral only to some extent [2].

Some long-standing neuromyths exist in products for teachers, and this has helped them spread to classrooms around the world. Genuine communication between neuroscience and education has developed significantly in recent years, but many of the biases and conditions responsible for neuromyths still remain and can be seen hindering efforts to introduce ideas about the brain into educational thinking. This abundance of misconceptions needs to be addressed to avoid the proliferation of stereotypes and ineffective teaching. In contrast, there is evidence from neuroscience research on facilitating factors to lasting, durable learning [12]. The human brain has the natural inclination to forget information at a quick pace [13]. Spaced repetitive practice enhances memory retention [14]. Emotions and the social atmosphere are influencing the cognitive processes of learning [15,16]. In addition, neuroscience has also identified concrete obstacles to learning. Physical factors such as lack of restful sleep or sufficient nutrition can hinder student learning [17].

A recent review has identified seven fundamental teaching principles based on neuroscience for application in higher education: (i) students' attention span, (ii) dual coding, (iii) chunking of content, (iv) teaching with emotions, (v) creativity, (vi) critical thinking, and (vii) consolidation and retrieval [18]. Attention decreases after the first 10–15 minutes of lectures, and cycles of vigilance and non-attention become shorter progressively [19]. Pedagogically informed lessons with active elements such as student-to-student and teacher-to-student interactions can keep students concentrated on tasks during longer periods [20]. The dual-coding process in students' minds through visual and verbal processing channels can be activated by using pictures, graphics, concept maps, and diagrams [21]. The content division into smaller, digestible pieces (chunking) is a way to greatly increase students' working memory capacity to facilitate long-term knowledge retention [22]. Affective procedures influence cognitive processes of learning as emotions imprint experiences into human long-term memory [23]. Negative emotions can distract or even inhibit learning, while positive emotions can foster a culture of accelerated learning and peer solidarity [16]. Creativity has been found to relate to activation in brain structures associated with the dopamine reward system [24].

The association of neuroeducation principles and the related pedagogies and theories is presented in Table 1.

Table 1. Neuroeducation principles and corresponding pedagogical theories and strategies.

Neuroeducation Principle	Pedagogy and Theory
Attention	Cognitive load theory [25]
Dual coding	Cognitive theory of multimedia learning [26] and generative learning [27]
Chucking of content	Zone of proximal development [28]
Emotions	Meaningful learning [29]
Creativity	Experiential learning [30] and inquiry-based learning [31]
Critical thinking	Critical pedagogy [32] and transformative learning [33]
Consolidation and retrieval	Deep knowledge processing [34]

Evidently, there is an upskilling need for professionals at all levels of education, especially higher education lecturers and professors. Teacher professional development can be essential to grasp the affordances of new media and for the formulation of pedagogy-informed teaching and learning practices [35]. In many countries, the higher education sector research is a clear priority over teaching and learning. Career advancement of academic faculty depends primarily on research rigor and publication record rather than pedagogical acumen and teaching performance [36]. The identification and analysis of training needs is the first step in instructional design methodologies and is especially important for the training of adult participants [37,38].

For this reason, a consortium of European universities has undertaken the task of enhancing the neuroeducation knowledge in Higher Education with the interdisciplinary neuropedagogy project within the Erasmus+ program. This is one of the first systematic initiatives to develop neuroscience-based teaching skills in higher education. In this study, we present the initial results of faculty members' perceptions and training needs regarding neuroeducation. These results can support university leaders, policy makers, and decision-makers in the quest to improve teaching quality.

2. Materials and Methods

The general objective of the neuropedagogy project is to improve the learning quality in European Higher Education by generating an innovative didactic proposal based on Neuroscience. For that reason, an exploratory mixed research method was designed, combining quantitative and qualitative approaches to obtain a diagnostic assessment of instructors' needs [39]. More specifically, a needs assessment survey was designed and conducted on academic instructors from Greek universities. A questionnaire was designed on the didactic neuroscience-based principles of attention, dual coding, engagement, emotions, creativity, and critical thinking [18]. Consequently, the purpose of the study is to explore their ideas and practice on the role of communication and emotions, their philosophy on teaching and learning, and their point of view on students' concentration and engagement during the lesson, in parallel to exploring the didactic methodologies they use, and their ideas and practice on critical and creative thinking as their lessons learning objectives. These goals are reflected in the structure of the developed instrument with corresponding sections. Some of these questions employ a five-level Likert scale to indicate the degree of agreement or disagreement with specific statements ranging from 1 to 5, with 1 corresponding to strongly disagree and 5 to strongly agree. The questionnaire is attached in Appendix A. Moreover, their demographic profile was identified as well as their knowledge in relation to neuroscience and neuropedagogy.

The survey was conducted between February and March 2021. Sixty (60) Greek academic instructors answered the questionnaire eponymously. In total, 53 academic instructors were from the University of Patras (88.3%), with 7 more participants from 4 more Greek Universities.

Concerning their professional identity, most of the participating academic instructors (26.7%) are Professors, 20% are Laboratory and Teaching Staff, 16% are Assistant Professors, and 10% are Associate Professors. Adjunct Lecturers also took part in the research.

Concerning their gender, 51.7% are female and 48.3% are male. A percentage of 40% belongs to the age group of 55+, 38.3% belongs to the age group of 45–54, and the rest, 21.7% belongs to the age group of 35–44. Concerning the highest level of education, 96.7% hold a Ph.D., and the rest have a master's degree.

Most of them have been teaching in Higher Education for more than ten years at Greek Universities, while a percentage of 18.3% teach for 5–10 years, a percentage of 11.7% teach for 2–5 years, and a small percentage teach for less than two years.

Concerning their scientific field, most of them (26.7 %) are from the field of Physics, 18.3% from the Humanities, 13.3% from the Educational Sciences, and 11.7% from Engineering. Lower percentages are following from the fields of Social Sciences, Health Sciences, Medicine, Biology, Art, Economic Sciences, and Natural sciences.

3. Results

Research findings are presented in respective subsections. In this section, we refer to the unique id of each question item in the questionnaire, as depicted in Appendix A. For instance, item D1 is the first question of section D of the survey.

3.1. Communication and Emotions

A strong 92% of the participating Greek academic instructors concur (agree and strongly agree) that the teaching and learning procedures are influenced by instructors' and students' emotions (Figure 1), and a percentage of 79% agree or strongly agree that a teacher with high communication skills captures students' attention and interest using emotions (A2). Moreover, a percentage of 70% confirm that they have strong communication skills (A3), and most of the academic instructors (68%) agree that they teach expressing their emotions (A4). Moreover, most of them (75%) agree or strongly agree that they teach by taking into account the emotions of their students (A5). Table 2 presents the mean and standard deviation of participants' agreement with the included statements regarding emotions in teaching.

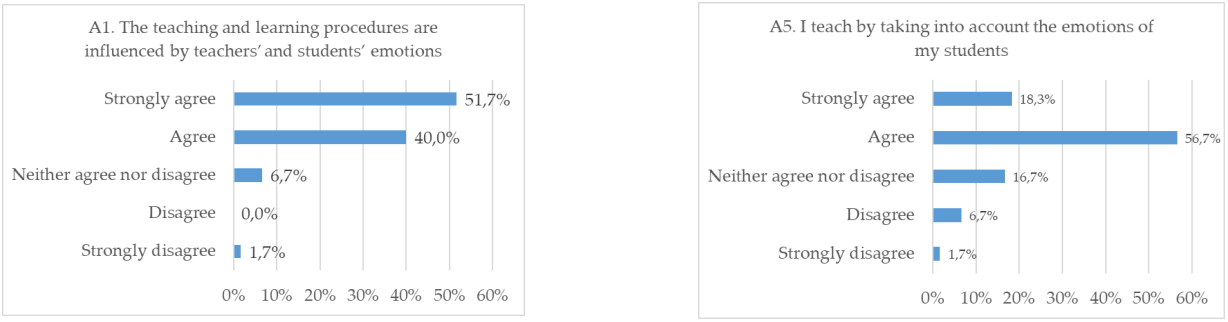


Figure 1. Perceptions of emotions influence on learning (A1, **left**) and on affective management of teaching (A5, **right**).

Table 2. Descriptive statistics of questions on emotions in teaching.

Question	Mean	Standard Deviation
A1: The teaching and learning procedures are influenced by teachers' and students' emotions.	4.4	0.76
A2: A teacher with high communication skills captures students' attention and interest using emotions.	3.83	0.94
A3: I believe that I have strong communication skills.	3.83	0.64
A4: I believe that I teach expressing my emotions.	3.77	0.91
A5: I believe that I teach by taking into account the emotions of my students.	3.83	0.87

3.2. Concentration and Engagement

A percentage of 63% of the academic instructors are aware of the attention span capacity of the age group that they are teaching (B1). In parallel, a percentage of 81.7% structure their lessons considering the attention span and concentration capacity of the age group that they are teaching (B2).

All (100%) academic instructors feel a decline in the students' attention after a certain period of time (B3). As illustrated in Figure 2, there is no consensus about the attention span of the students. While 43.3% estimate this period to be 30 min, equal amounts of respondents, 26.7%, thought this was shorter (15 min) and longer (45 min). Additionally, 56 out of 60 academic instructors mentioned several factors that keep their students engaged/interested (B3.2), and 55 of them mentioned several distracting factors. Concerning the factors that keep students engaged/interested (B3.3), 56 out of 60 participants shared their opinions. Specifically, they mentioned as examples the following: the teaching methodology, the sharing of personal experiences, collaboration in groups, the topic, interaction and interactivity, the lively expression of the academic discourse by the teacher, his/her knowledge, and the way of presenting the information to students, as well as the attitude of students in the classroom and the educational natural environment in face-to-face teaching.

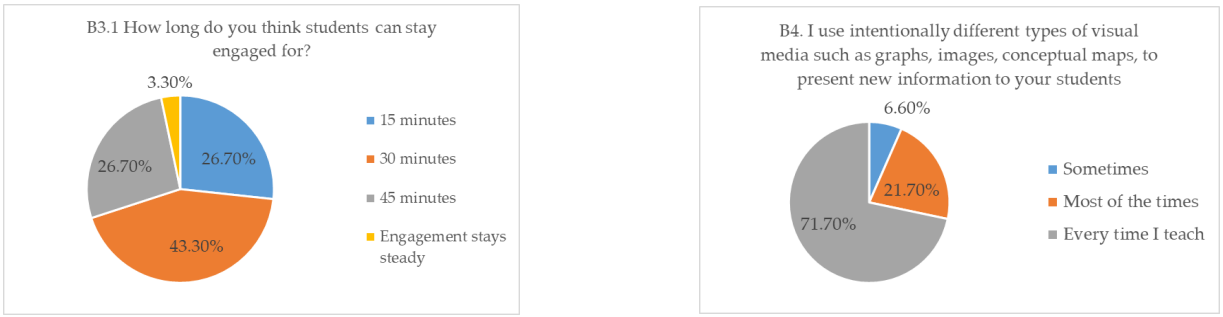


Figure 2. Perceptions on student attention and engagement (B3.1, **left**) and use of visual media in teaching (B4, **right**).

Concerning the factors that distract students' engagement/interest (B3.3.), 55 out of 60 participants shared their opinions. Specifically, they mentioned as reasons for distraction and, therefore, reasons for inactive involvement and disorientation the following: the presentation's type and the teaching methodology with specific characteristics contribute to the limited interest of students and their lack of participation in the course (e.g., level of difficulty, monotonous talk, no interaction, no movement around the classroom), the uninteresting subject of teaching, the lack of understanding and the level of difficulty of the taught concepts, the lack of interaction and emotional connection, the low self-esteem, the role of the teacher when he/she is not 100% committed to his/her teaching, the use of mobile phones for personal reasons, the personal emotional problems, but also the physical fatigue of either the teacher or the students. These factors are presented in a systematic way in Figure 3. However, 72% of the participants mentioned that they use every time they teach using intentionally different types of visual media, such as graphs, images, and conceptual maps, to present new information to their students (B4), and a percentage of 21.7% mentioned that they use visual media most of the times (Figure 2).

3.3. Didactic Methodologies

All participants (60) answered the questions that are related to teaching and learning methods they use in (a) physical and (b) online settings (Figure 4). Concerning the face-to-face didactic methodologies (C1), a large percentage of 96% mentioned that they use lectures. A percentage of 78.3% use project-based methodology, 73.3% use practical and laboratory exercises, 65% use problem-based approaches, 61.7% use collaborative learning, 26.7% use

design thinking, 15% use gamification, and 13% use other teaching methodologies such as flipped learning.

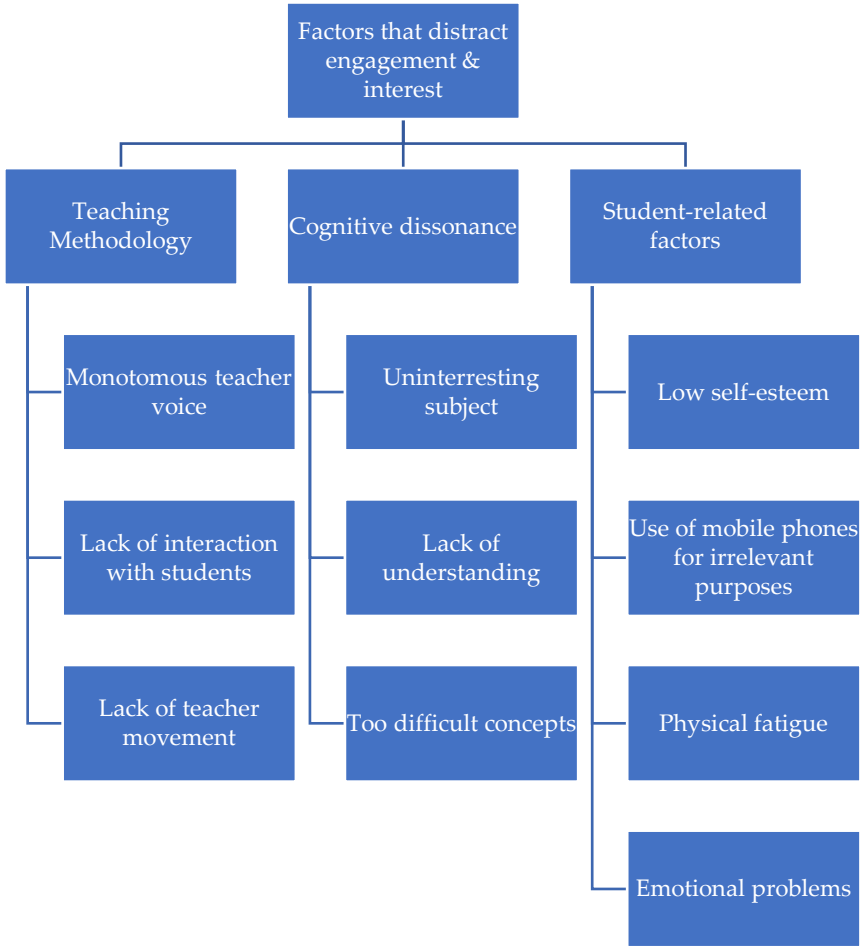
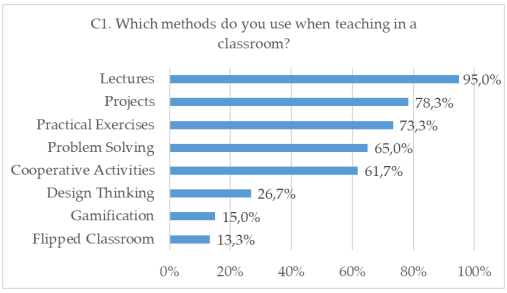


Figure 3. Factors that negatively influence students' engagement and interest during teaching.



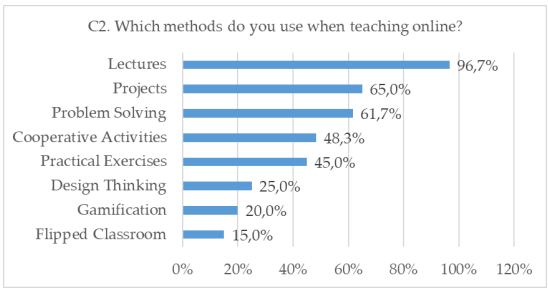


Figure 4. Instructional methods for classroom (C1, **left**) and online teaching (C2, **right**).

Concerning the didactic methodologies for online learning (C2), almost all (96.7%) mentioned that they use lectures, 65% use project-based learning, 61.7% use problem-based learning, 48.3% use collaborative learning, 45% use practical exercises, 25% use design thinking, and 20% use gamification. Moreover, academic instructors explained in a few words how they apply these methods, mentioning concrete examples (C3). The most common examples mention lectures with the use of PowerPoint slides, (medical) lab experiments, practical exercises during the lesson, collaborative activities in small teams (face to face and online in breakout rooms), projects, and given assignments mostly at home.

Academic instructors explained in a few words if they face any difficulties in the implementation of these methods and what they are (C4). Twenty-one (21) out of sixty (60) answered that they did not face any difficulties, while thirty-eight (38) of them mentioned that several problems exist as "the large number of students and in that case the difficulty to work in groups, either in face-to face or distance learning, is one of the most common difficulties". Very interesting is the view that another inhibitory factor is "the conservative way that the students themselves have been taught for so many years, that it is difficult for them to try something new, that requires critical thinking skills".

Most of the participants (60%) are not aware of the term associative memory (C5), although a great percentage of 96,7% try to teach new concepts using day-to-day experiences, practical examples, and applications (C6). An interesting piece of information is that 35% of the academic instructors do not use any other student assessment method other than the traditional ones, such as exams with grades, when given the opportunity (C7). In contrast, 65% stated that when given the opportunity, they use any other student assessment method other than the traditional ones. Common methods include "assignment of synthetic tasks like projects, internships and laboratory applications, discharge assignments, grading gifts, and oral examinations" (C7.1). It is also mentioned that a percentage of 94% of these responders noticed a positive student response or effect towards a specific non-traditional assessment method (C7.2).

Specifically, they mention: "there is participation and interest, whatever new I find that excites them, they are much more engaged in the process, they participate with great joy, they have fun, often the participating team is tied, inclusiveness is enhanced, they better reflect their thinking on oral alternatives forms of evaluation, from writing it, etc.)" (C7.3).

Additionally, 7 out of 60 participants believe that university students prefer this method over a traditional assessment method, explaining their opinions (e.g., it is something different because the traditional form does not suit everyone, they are involved in the learning process and do not deal with the lesson only during the exam period) (C7.4).

3.4. Creativity and Critical Thinking

Concerning creativity, 92% of all participants encourage their students to develop their creativity in their course(s), and only a percentage of 8% do not do it (D1).

In total, 60% of the five (5) participants that do not encourage their students to develop their creativity in their course(s) support that it is not possible for objective reasons (e.g., lack of time), and 40% argue that creativity is not a relevant skill for the scientific domain they teach (D2).

Moreover, 57 out of 60 participants explained the concrete ways they develop students' creativity. Most of them mention questions, collaborative learning, problem solving based on case studies, inquiry-based learning through projects and questioning (D3). Although most replies mention active learning practices, not all of them can be directly associated with creativity development.

Concerning critical thinking, almost all (98.3%) participants answered that they encourage students to develop their critical thinking in their courses. (D4). Only one (1/60) of them answered that this cannot happen as it is not possible for objective reasons (e.g., lack of time) (D5).

Several participants (55) described concrete ways they develop their students' critical thinking. Most of them mention problem solving based on authentic case studies, collaborative learning, visual tools and digital programs, questions–answers, and assignments (D6).

All (60) participants shared their opinions regarding enhancing actions. Some academic instructors believe that there is always room for changes to improve the existing curriculum of their course(s) to create favorable conditions for the development of their students' creativity and critical thinking (D7), while others believe that there are other responsible parameters for eventual lack of creativity and critical thinking such as the applied didactic methodology and the huge number of students in the classroom.

3.5. Neuroscience and Neuropedagogy

Considering academic instructors' knowledge of neuroscience applied to teaching, 71.7% of the participants have heard the terms neuroscience and neurodidactics (E1). In total, 51.7% of the participants are familiar with and claim to know basic notions of neuroscience (E2), and 76.7% are familiar with or have basic notions of neuropedagogy (E3). Fourteen (14) participants argued that they apply their knowledge of neuropedagogy in their teaching practice, giving some examples of use as follows (E3.1.):

> "Because movement has been found to aid both cognitive process and memory, several times during the lesson I will ask for activities such that the students move in the space".

> "Time matters after the introduction of a new idea, the principle of including critical based learning (increasing frontal lobe activation)".

> "Repetition matters, so 2 weeks later we repeat information presented in lectures".

Interestingly, among these statements, there are some that could reflect questionable beliefs, such as the following:

> "I know the relationship between creativity and the left and right hemispheres of the brain".

> "We apply Gardner's multiple intelligence to pedagogical practice and design".

None of the participants had attended any kind of formal training on neuroscience-based approaches in education. Finally, 93.3% of responders feel that they could benefit from specialized neuropedagogy training on teaching and learning assessment. In total, 31 participants expanded on their training needs. The majority stress their desire to improve their teaching practice in the classroom (E4.1.) Many participants are interested in learning how the principles of neuropedagogy can be applied to large student audiences.

4. Discussion and Conclusions

The results of this exploratory study led to a series of notable observations. First, academics recognize the validity and importance of neuroeducation training and the practical application of neuropedagogy in teaching. They point out the specific knowledge and skills gaps around neuropedagogy that can be addressed through professional development. They are interested and eager to learn. Second, declarations about teaching perceptions and self-reported theoretical principles are not always aligned with tangible teaching practice. For instance, although faculty members recognize the importance of emotions for learning in accordance with research [23], they appear hesitant to apply them in practice. Regarding student attention and engagement, although there are empirical studies that suggest that attention lapses 10–18 min after the start of a lecture and every 3–4 min towards its end [40], participating lecturers are undecided about how long they can maintain the focus of their audiences. Equally important is a deep comprehension of memory function for the enhancement of knowledge retention. Eventual misconceptions about the brain might be present. Not all employed pedagogical methods ensure desired student outcomes such as creativity and critical thinking. Recent studies have captured common misconceptions among Higher Education faculty [41], e.g., 10% brain use and hemispheric dominance. Alternative, creative assessment methods can be very useful in increasing students' interest and engagement. As academics have shared very interesting practices and teaching experiences, we consider as vital the creation of a community of practice to allow free-flowing communication and peer exchange to facilitate flexible discourse and value creation [42].

The main contribution of this study is the sketching of a complete procedure to capture systematically university faculty prior knowledge, opinions, and neuroeducation needs, one of the first of its kind. The identified training needs should be useful for the faculty's continuous professional development initiatives in international contexts. The findings of the current research can have an impact on practice, on the one hand, because they represent a sample of sixty academic instructors across all domains residing in five universities and,

on the other hand, because they capture their views and practice through a plethora of examples. Almost all participants, being aware of neuroscience and neuropedagogy or not, feel that they could benefit from specialized training on teaching, learning, and assessment based on neuroscience. Everyone wants to improve their teaching practice in the classroom, and many of them are interested in learning how the principles of neuropedagogy can be applied to a large audience of students.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the University of Patras (protocol code 6823/9 October 2020).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author, S.M.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A Questionnaire on Neuroscience Applied to Higher Education

A. Communication and Emotions

Please indicate your level of agreement or disagreement with each of these statements, '1' meaning that you strongly disagree and '5' that you strongly agree. Please circle your answer.

1. The teaching and learning procedures are influenced by educators' and students' emotions.
2. A teacher with high communication skills captures students' attention and interest using emotions.

I believe that I have strong communication skills.
I believe that I teach expressing my emotions.
I believe that I teach by taking into account the emotions of my students.

B. Concentration and Engagement

1. Are you aware of the attention span capacity of the age group that you are teaching? (e.g., how much time can your students stay focused during the presentation of a new concept or during an activity?)
2. Do you structure your lessons considering the attention span capacity of the age group that you are teaching?
3. Do you feel a decline in the students' attention after a certain period?
   - 3.1 If so, how long do you think they can stay engaged for?

     15 min
     30 min
     45 min
     Engagement stays steady
   - 3.2 What factors (a) keep your students engaged/interested and (b) distract your students?
4. How often do you intentionally use different types of visual media such as graphs, images, and conceptual maps to present new information to your students?

Every time I teach
Most of the times I teach
Sometimes
Never

C. Didactic Methodologies

1. Which methods do you use when teaching in a classroom or auditorium? Tick as many as apply.

   Lectures
   Practical exercises/lab experiments
   Projects
   Problem solving
   Flipped classroom
   Cooperative activities (group work)
   Gamification
   Design thinking
   Other (please specify in the next question)

2. Which methods do you use when teaching online? Tick as many as apply.

   Lectures
   Practical exercises/lab experiments
   Projects
   Problem solving
   Flipped classroom
   Cooperative activities (group work)
   Gamification
   Design thinking
   Other (please specify in the next question)

3. Please explain in a few words how you apply these methods. Add a concrete example.
4. Do you face any difficulties in the implementation of these methods? If so, what are they?
5. Are you aware of the term 'associative memory'?

   Yes
   No

6. Do you try to teach new concepts using day-to-day experiences, practical examples, and applications?

   Yes
   No

7. When given the opportunity, do you use any other student assessment method other than the traditional ones such as exams with grades?

   Yes
   No

   7.1 If yes, which ones and how?

8. Have you noticed a positive student response or effect towards a specific non-traditional assessment method?

   Yes
   No

   8.1 If yes, which positive student response have you observed?
   8.2 Do you believe they prefer this method over a traditional assessment method? Why?

D. Creativity and Critical Thinking

1. Do you encourage students to develop their creativity in your course(s)?

   Yes
   No

   1.1 If no, why not?

   Creativity is not a relevant skill for the scientific domain I teach
   Creativity is not included in the course's learning outcomes this period
   It is not possible for objective reasons (e.g., lack of time)
   Other (I will explain in the next question)

   1.2 If Yes, please explain in what concrete ways? (e.g., to develop my students' creativity, I follow... and use... For example, when I teach... I do...)

2. Do you encourage students to develop their critical thinking in your course(s)?

   2.1 If no, why not?

   Critical thinking is not a relevant skill for the scientific domain I teach
   Critical thinking is not included in the course's learning outcomes this period
   It is not possible for objective reasons (e.g., lack of time)
   Other (I will explain in the next question)

   2.2 If yes, please explain in what concrete ways? (e.g., to develop my students' critical thinking, I follow... and use... For example, when I teach... I do...)

3. Do you think you need to improve the existing curriculum of your course(s) to create favorable conditions for the development of your students' creativity and critical thinking? If yes, please explain how.

E. Neuroscience and Neuropedagogy

1. Have you ever heard of the terms neuroscience and neurodidactics?

   Yes
   No

2. Are you familiar with or do you have any basic notions of neuroscience?

   Yes
   No

3. Are you familiar with or do you have any basic notions of neuropedagogy?

   Yes
   No

   3.1 If so, do you apply your knowledge of neuropedagogy to your teaching practice?

   Yes
   No

   3.2 If so, how? Please add a concrete example.

4. Do you feel that you could benefit from specialized neuropedagogy training on teaching and learning assessment?

   Yes
   No

   4.1 If yes, please expand on your training needs.

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