A Scale development study: Scale of the instructors' and students' equity and diversity competencies

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Abstract

This study was conducted in order to examine the instructors' equity and diversity competencies to promote a learning environment conducive to learning. This project is being carried out across five countries and focuses on ethnic/racial diversity, gender, sexual orientation, cultural diversity, and disabilities. Question pools from each country were combined and after the brainstorming sessions 40 items were selected representing each of the 5 diversity domains and 2 separate scales were developed; one for students and one for instructors. First, a pilot study was conducted to test reliability and validity. The survey was in the form of a 5-point Likert scale. A total of 312 people from different countries participated in this study. 186 of these people were students and 126 of them were instructors. At the end of the analysis, 35 items for the student survey and 36 items for the faculty scale were found to be acceptable. In general, the scales showed acceptable psychometric properties, proving that it is a valid and reliable scale.

Key words: instructors' equity, ethnic/racial diversity, gender, sexual preferences, scale development, disability in education

1. Introduction

Promoting Inclusive Education at Tertiary Level (JoinMe2) Project aims at equipping Higher Education (HE) instructors with the necessary competencies in equality and diversity so that they promote a learning environment that is conducive to learning. The survey application was included in the project in order to analyze the subject, which is the project's scope and focus. In order to support a learning environment conducive to learning according to the equality and diversity competencies of the instructors and students, it was decided to use a scale in order to identify the conceptualization of the concepts by universities instructors and how these instructors' students perceive these behaviours in their classroom practices.

First and foremost, a detailed research was conducted for the study of the survey application. The results of the studies revealed that there is no one scale that can be used to evaluate the project subjects. It was decided to create separate surveys for instructors and students in order to evaluate these key themes. Because of this, after the construction of the survey it was deemed suitable to carry out a pilot research to assess the reliability and validity of scale.

1.1. The Project

The project consortium consists of countries that have various concerns about the general topic diversity. It is a known fact that each participant country regarding their cultural heritage, economic situation and educational background, experience diversity in different degrees and levels, which makes this project more relevant. This project does not only explore different attitudes and solutions, but also aims to apply existing solutions from one country to the problems in another. It

is therefore important that this project is carried out across national borders by focusing on the issues of ethnic/racial diversity, gender, sexual preferences, cultural awareness and disabilities. Based on this, 7 institutions from six different countries (Izmir Ekonomi Universitesi and Limon Agaci Kultur Dernegi from Turkey, Katholieke Universiteit Leuven from Belgium, Panepistimio Aigaiou from Greece, University of Derby from UK, Pomeranian University in Slupsk from Poland, University of Bremen from Germany) form the consortium of JoinMe2.

The following intellectual outputs form the core of the project:

Output 1: Inclusive Education: descriptive and comparative analysis the empirical surveys help us identify existing attitudes and beliefs towards the concept.

Output 2: Inclusive Education Portal: All the activities conducted in Output 2 serve the aim of designing/creating the educational material for the courses to be offered in the training portal.

Output 3: Training the activities carried out at this stage form the core of the whole project, which is implementing the inclusive education training by the use of an experimental set-up.

Output 4: Knowledge Portal The development of this portal is the main means for reaching the expected results of the project as this is the platform in which all the information, documents, reports, project results and further studies on inclusive education are shared. Inclusive education and the issue of diversity are not topics that are limited to the six countries involved in the project. Neither are they limited to HE.

The following section outlines the stages involved in the creation and design of the survey distributed during the data collection stage of the project.

2. Method

2.1. Procedure

The process of the scale construction started with the literature search in the field of diversity and inclusive education diagnostic tools. Partner countries carried out a literature search and created their own question pools. Question pools from each country were combined and during brainstorming meetings 40 items were selected to represent each of the 5 diversity areas, and 2 separate scales were developed, one for students and one for instructors. Questions eliciting demographic information were added to design the initial version to be used in the pilot study. The psychometric properties of the scale were developed and checked by Maria Aleksandrovich from Pomeranian University in Slupsk, Poland and Tuba Kasaboğlu from Izmir University of Economics, Turkey.

A pilot study was first carried out to check reliability and validity values. In the scales, there were 40 items with 8 items for each diversity topic: gender, cultural awareness, ethnic background, sexual preferences and disability for both students and instructors. The survey was created in the form of 5 point-scale Likert Type.

Data collection was carried out via Google-forms in the six countries involved in the project. Google Forms is a cloud-based data management tool used to design and develop web-based questionnaires. Google Forms records interlocutor data in its spreadsheet and provides the opportunity to export to other statistical data packages for analysis. Responses to each item are given in 5-point rating scales with response intervals that range from 1 (Strongly Disagree) to 5 (Strongly Agree).

Firstly, all participants were given a brief overview of the study and were asked to sign an informed consent form, which stated that participation was completely voluntary and that they might leave at any time without giving a reason. Then, participants were asked to report their demographics (gender, age, education, employment status, country of residence, experience of living abroad, experience of contacting with disabled people, experience of contacting with people with different sexual preferences).

Additional to the scale, students and instructors were asked whether there is a procedure where they can make a statement on the basis of the 5 main headings that make up the scales (disability, ethnic background, cultural awareness, sexual preferences and gender).

Table 1. Statements for Students

	Yes	No	No İdea
Is there any procedure for students reporting for discrimination based on cultural awareness?			
Is there any procedure for students reporting for discrimination based on ethnic background?			
Is there any procedure for students reporting for discrimination based on sexual preferences?			
Is there any procedure for students reporting for discrimination based on gender?			
Is there any procedure for students reporting for discrimination based on disability?			

Table 2. Statements for Instructors

	Yes	No	No İdea
Is there any procedure for instructors reporting for discrimination based on cultural awareness?			
Is there any procedure for instructors reporting for discrimination based on ethnic background?			
Is there any procedure for instructors reporting for discrimination based on sexual preferences?			
Is there any procedure for instructors reporting for discrimination based on gender?			
Is there any procedure for instructors reporting for discrimination based on disability?			

2.2. Participants

A total of 312 individuals from different countries participated in this study. 186 of these individuals were students and 126 of them were instructors. Tables 3 and 4 give more detailed demographic information regarding the student and instructor samples.

Table 3. Demographic Information for Instructors

	Gender		Age						Education level			
	Female	Male	18-25	26-35	36-45	46-55	56-65	66+	Bachelor Degree	Master Degree	PhD Degree	Professor
Turkey	25	10	-	4	7	14	9	1	16	12	7	-
Greece	15	23		1	4	18	13	3	-	2	5	32
Germany	8	9	1	8	2	6	1	-	-	10	4	4
UK	5	2	-	1	1	5	-	-	-	2	5	-
Poland	18	7	4	5	9	5	4	-	1	16	6	4
Total	71	51	5	19	23	48	27	4	17	42	27	40

* Values in the table are N values

The majority of instructors have been in teaching for 16-25 years (N=40, %31.7) and at least 6-10 years (N=16, %12.7). Most instructors do not have someone with a disability in their family or community (N=95, %75.4), while the remaining instructors have someone with a disability in their family or community (N=31, %24.6) , and also most instructors do not have anyone in their family or community with different sexual preferences (N=67, %53.2), but few of the instructors have someone with other sexual preferences in their family or community with different sexual preferences (N=59, % 46.8).

Table 4. Demographic Information for Instructors

	Gender		Age				Education level		
	Female	Male	18-25	26-35	36-45	+46	Bachelor Degree	Master Degree	PhD Degree
Turkey	27	18	44	1	-	-	44	1	-
Greece	21	6	9	6	10	3	14	12	2
Belgium	27	15	22	15	5	1	18	25	-
UK	9	6	13	2	-	-	10	5	-
Poland	32	23	52	2	1	-	55	-	-
Total	116	68	140	26	16	4	141	43	2

* Values in the table are N values

In addition to the above table, it can be seen in the other demographic details that the majority of students are in the 3rd year of study (N=95, %51.1), while the fewest students are in the preparatory class (N=2, %1.1) but also there are master students in the group (N=40, %21.5).

In this student group, many students never lived abroad for more than 6 months (N=129, %69.4), but the other part of the student group lived abroad for more than 6 months (N=57, %30.6). Most students do not have anyone with a disability in their family or community (N=136, %73.1), while the remaining students have someone with a disability in their family or community (N=50, %26.9), and also most students have no one in their family or environment with other sexual preferences (N=98, %52.7), but few of the students have anyone in their family or environment with other sexual preferences (N=88, %47, 3).

2.3.   Data Analysis

In this study a mix of psychometric, quantitative, and qualitative methods was used.
The first part of the study consisted of a psychometric approach that included: studying the literature to find out the "state of the art" in the field of testing parameters such as gender, cultural awareness, ethnic background, sexual preference, and disability; the construction of research scales for students and instructors to test parameters such as gender, cultural awareness, ethnic background, sexual preferences and disability for the objectives of our study; the pilot study of the psychometric properties of the constructed research scales

The second part of the study consisted of a quantitative approach that included: the quantitative testing of parameters for 5 diversity areas on representative groups of students and instructors from six different countries (Turkey, Greece, Poland, Belgium, UK and Germany); statistical analysis of the data obtained.

The third part of the study consisted of a qualitative approach that included: the description of the data collected in the main phase of the study; the qualitative analysis of the data obtained with the data from other studies with the aim of writing a scientific article.

The statistical investigation was carried out in SPSS using descriptive statistics, factor analysis, and the study of the discriminatory power and post hoc comparisons (Dunnett's test and Sidak's test for multiple comparisons) of the data in both the groups of students and instructors from six different countries. Based on the data obtained, we were able to determine which statements would be used in the actual project research. All statements with unsatisfactory psychometric properties (for example, Cronbach's alpha ≤ 0.06) were excluded from the scales. The sample size was calculated using the sample size formula, which takes into account the total number of subjects, the confidence level (which is 95% for our study), and the margin of error (which is 5% for our study).

3. Results

The obtained data allowed us to conclude, which items to use in the final version of the survey. All the items with unsatisfactory psychometric characteristics (Cronbach's alpha $\leq 0, 06$) were excluded from the scales. Nevertheless, some items which showed low results on Cronbach's alpha were left for the main study, because they showed low results in the group of instructors, but very high in the group of students. These were the statements from the scale for instructors: 25, 33, 34, 39, 40, and 41. At the end of the analysis 35 items were found to be acceptable for student survey and 36 items for the instructors' scale.

In general, the scales showed good psychometric characteristics, which proves to be a valid and reliable scale. Table 5 shows the survey items for the student scale and Table 6, the one for instructors at the piloting stage.

Table 5. The Scale Developed for Pilot Study Student

	Together	Belgium/UK	Greece	Poland	Turkey
Cultural Awareness					
1. The instructors at my university adequately address multicultural issues in their classes.	0,70	0,78	0,70	0,65	0,62
2. My instructors try to provide opportunities for activities related to cultural awareness.	0,76	0,77	0,75	0,70	0,71
3. My instructors' classroom behaviours are influenced by his/her culture.*					
4. My instructors are less patient with students of different cultural backgrounds.					
5. I believe my instructors are comfortable working/studying with colleagues/students of different cultural backgrounds.*	0,56	0,45	0,68	0,52	0,63
6. My instructors help me to increase my understanding of multicultural issues.	0,70	0,70	0,77	0,53	0,76
7. During group discussions or exercises, the instructors make efforts to ensure all students are included regardless of their cultural backgrounds.	0,71	0,71	0,79	0,73	0,48
8. My instructors seem comfortable discussing cultural issues in the classroom.	0,69	0,81	0,73	0,73	0,48
Ethnic Background					
9. My instructors accept different behavioural/verbal expressions of ethnicity.	0,66	0,60	0,80	0,41	0,74

10. I think my instructors are concerned about racial inequality in education.*	0,49	0,49	0,47	0,44	0,55
11. Students' ethnic background does not affect my instructors' behaviour in the classroom.	0,46	0,35	0,72	0,23	0,74
12. My instructors help me develop my awareness of different ethnic backgrounds.	0,60	0,42	0,72	0,49	0,75
13. My instructors understand why students of other ethnic backgrounds act differently.	0,61	0,47	0,78	0,40	0,73
14. My instructors try to stop racist behaviours in my classroom.	0,67	0,65	0,84	0,47	0,74
15. My instructors avoid telling jokes about other ethnicities and racial groups.	0,37	0,14	0,69	0,47	0,66
16. My instructors react to ethnically biased behaviour in the classroom.	0,50	0,48	0,67	0,52	0,43

Sexual preferences

17. My instructors offer equal learning opportunities to gay and heterosexual students.	0,52	0,58	0,84	0,45	0,28
18. I would feel comfortable having a gay teacher.*					
19. My instructors would not reveal their sexual orientation.*					
20. Any mentions of the word "homosexuality" makes my instructors feel uncomfortable.	0,60	0,37	0,84	0,73	0,50
21. According to my instructors homosexuals affect the University's reputation negatively.	0,69	0,70	0,83	0,76	0,48
22. According to my instructors homo and heterosexuals have the same learning-working habits.	0,48	0,60	0,76	0,40	0,36
23. I think my instructors would feel comfortable having a homosexual student.	0,65	0,80	0,82	0,46	0,56
24. According to my instructors homosexuality is a psychological disorder and requires therapy.	0,58	0,69	0,42	0,69	0,54

Gender (Male/Female)

25. My instructors treat students equally, regardless of their gender.	0,56	0,58	0,84	0,54	0,44

26. According to my instructors females are better students than males.	0,63	0,58	0,67	0,68	0,64	
27. According to my instructors some jobs/departments are not appropriate for females to study.	0,80	0,82	0,81	0,84	0,70	
28. According to my instructors marriage is more important than education for females.	0,71	0,66	0,83	0,71	0,67	
29. During lessons, my instructors' attitude is different with males and females.	0,79	0,67	0,82	0,82	0,85	
30. My instructors would prefer teaching only male or only female classes.	0,72	0,73	0,78	0,67	0,79	
31. My instructors expect females to obey school rules more than males.	0,68	0,66	0,76	0,85	0,37	
32. My instructors consider specific interests and needs of males and females.*						

Disability

33. My instructors treat students with a disability as if they have no feelings.	0,56	0,46	0,73	0,81	0,29	
34. My instructors have knowledge and skills to educate students with disabilities.	0,52	0,70	0,43	0,38	0,53	
35. My instructors are willing to adjust their teaching to support students with disabilities.	0,59	0,77	0,65	0,44	0,55	
36. My instructors are comfortable working with students with disabilities.	0,64	0,83	0,53	0,57	0,56	
37. According to my instructors students with disabilities should be educated in separate classes.	0,59	0,62	0,45	0,73	0,49	
38. Students with disabilities are a burden on the educational system.	0,37	0,26	0,14	0,68	0,32	
39. My instructors become impatient with disabled students.	0,63	0,77	0,53	0,75	0,43	
40. My instructors don't expect too much from disabled students.	0,61	0,71	0,54	0,59	0,58	

*items which was out of the scale according to their Cronbach's alpha value.

Table 6. The Scale Developed for Pilot Study for Instructors

	Together	Belgium/UK	Greece	Poland	Turkey
Cultural Awareness					
1. I adequately address multicultural issues in my classes.	0,55	0,71	0,57	0,56	0,38
2. I try to provide opportunities for activities related to cultural awareness.	0,52	0,73	0,54	0,52	0,24
3. My classroom behaviours are influenced by my culture.*					
4. I am less patient with students of certain cultural backgrounds.*					
5. I feel comfortable working/studying with colleagues/students of different cultural backgrounds.	0,38	0,38	0,13	0,80	0,16
6. I feel uncomfortable when I am in the company of people from different cultural backgrounds.	-0,05	-0,07	-0,01	-0,03	-0,06
7. During group discussions or exercises, I make efforts to ensure all students are included regardless of their cultural backgrounds.	0,45	0,44	0,31	0,69	0,32
8. I feel comfortable discussing cultural issues in the classroom.	0,53	078,	0,61	0,62	0,06
Ethnic Background					
9. I accept different behavioural/verbal expressions of ethnicity in my classes.	0,48	0,67	0,27	0,42	0,62
10. I am concerned about racial inequality in education.	0,43	0,24	0,46	0,75	0,29
11. A student's ethnic background does not affect how I behave in the classroom.	0,27	0,05	-0,11	0,46	0,35
12. I feel comfortable when I am in the company of people from different ethnic backgrounds.	0,51	0,36	0,38	0,69	0,65
13. I understand why students of other ethnic backgrounds act differently.	0,40	-0,06	0,43	0,69	0,39
14. I try to stop racist behaviours in my classroom.	0,45	0,30	0,41	0,77	0,28
15. I think students should avoid telling jokes about other ethnicities and racial groups.	0,23	0,10	0,15	0,54	-0,15

Item					
16. I think prejudice about different ethnic or racial groups are wrong.	0,40	0,57	0,07	0,79	0,16

Sexual preferences

Item					
17. I think that students who are gay should be able to receive equal education as heterosexual.	0,43	0,23	-0,03	0,86	0,70
18. I would feel comfortable teaching a gay student.	0,67	0,23	0,63	0,87	0,67
19. If I am gay and reveal my sexual orientation in the classroom, it will endanger my academic life.*					
20. Any mentions of the word "homosexuality" make me feel uncomfortable.*					
21. Homosexuals affect the University's reputation negatively.	0,32	-0,13	0,44	0,12	0,49
22. Homo and heterosexuals have the same learning-working habits.	0,30	-0,10	0,23	0,47	0,34
23. I would feel comfortable having a homosexual officemate.	0,50	-0,04	0,29	0,87	0,71
24. Homosexuality is a psychological disorder and requires therapy.*					

Gender (Male/Female)

Item					
25. Students should be treated equally, regardless of their gender.	0,44	0,52	0,67	0,67	-0,01
26. Females are better students than males.	0,50	0,38	0,51	0,51	0,64
27. Some jobs/departments are not appropriate for females to study.	0,61	0,63	0,65	0,65	0,74
28. For females, marriage is more important than education.	0,31	0,00	0,16	0,16	0,70
29. During my lessons, my attitude is different with males and females.	0,45	0,65	0,04	0,04	-0,09
30. I prefer to teach only male or female classes.	0,36	0,76	0,06	-0,06	-0,08
31. I expect females to obey school rules more than males.	0,67	0,68	0,67	0,67	0,52
32. I consider specific interests and needs of males and females.					

Disability

Item					
33. Students with disabilities can socially and emotionally develop when they study with students without disabilities.					
34. I have knowledge and skills to educate students with disabilities.	0,41	0,61	0,33	0,34	0,48
35. I am willing to adjust my teaching to support students with disabilities in my classes.	0,41	0,19	0,28	0,67	0,53
36. I feel comfortable working with students with disabilities.	0,56	0,63	0,43	0,49	0,73

37. I think students with disabilities should be educated in separate classes.	0,49	0,31	0,39	0,36	0,67
38. Students with disabilities are a burden on the educational system.*					
39. I tend to become impatient with disabled students.					
40. I don't expect too much from disabled students.					

*items which was out of the scale according to their Cronbach's alpha value.

4. Conclusion

The JoinMe2 Project seeks to provide instructors in higher education with the skills they need in equality and diversity so they can support a learning environment that is favorable to learning. By concentrating on themes of gender, sexual preferences, cultural awareness, ethnic background and disabilities, this project spans international borders. The scale was established according to evaluate the teachers' equity and diversity competences in order to foster a learning environment that is favorable to learning. It was decided to conduct a pilot study to evaluate the scale's validity and reliability once the survey was constructed.

The results of the pilot study, which was applied to 312 people in total, of which 186 participants were students and 126 participants were trainers, were examined to check if survey has a good psychometrics. In general, the scale exhibited good psychometric properties and proved to be a valid and reliable scale. According to results of the pilot study, after examination, it was determined that 36 items for the instructors' scale and 35 items for the student survey were suitable. The scales did not include any items with subpar psychometric properties (Cronbach's alpha 0, 06). However, some items that performed poorly on Cronbach's alpha were kept for the main study because they performed poorly in the instructor group but very well in the student group. In general, the scale exhibited good psychometric properties and proved to be a valid and reliable scale. According to results of the pilot study, after examination, it was determined that 36 items for the instructors' scale and 35 items for the student survey were suitable.