

A PEDAGOGICAL ARCHITECTURE FOR SYSTEMS DESIGN AND DEVELOPMENT IN REMOTE LEARNING BASED ON SOFTWARE ECOSYSTEMS CHARACTERISTICS

TERM INFORMED CONSENT

This questionnaire aims to obtain information about students' understanding of factors that affect the design and construction of systems.

The information listed below is being provided for voluntary participation in this study. The information obtained will be analyzed with that of other research participants, and the confidentiality of the information obtained during the work is guaranteed. All data and results will be used in the research paper entitled "Obtain information about students' understanding of factors that affect the design and construction of systems."

PROCEDURE: The questionnaire will be online. During the first part, we asked you to answer the questionnaire by providing information about your knowledge of the subject. In the second part, you will be presented with scenarios that can occur in software design and construction and asked if you have observed them during the course. Finally, the course evaluation is performed. It is estimated that answering all three parts will take ten (10) minutes.

VOLUNTEER: The volunteer participant will be accompanied by at least one researcher, and the researchers can clarify any questions about the research through the contact information available at the end of this document.

SUBJECT PRIVACY: The researchers were assured that the information obtained would be kept confidential, thus maintaining the participants' privacy.

WITHDRAWAL: The research volunteer can withdraw from participation at any time, even if the work is in its final stages.

DISADVANTAGES or RISKS: The following intellectual and emotional risks may be reported if the participant perceives any following condition and may, at his or her discretion, immediately discontinue participation: feelings of embarrassment, discomfort, fear, embarrassment, stress, and fatigue.

REIMBURSEMENT OR INDEMNIFICATION: There are no personal expenses for participating in this study and no financial compensation, as the research does not suggest any burden to the participants.

THE RESEARCH: The researcher will treat your identity with professional standards of confidentiality and integrity. The results of the research will be available to you upon completion. Your name or material indicating participation will not be released without your permission.

I declare that I have been informed of the objectives of this work in a clear and detailed way and that I have clarified my doubts. I understand that at any time, I may request new information and change my decision to participate if I so wish.

Questionnaire

Information from the questionnaire (Tables I, II, and III) was applied to obtain information on the PA and the relationship of influence between students considering the characteristics of an influencer in SECO.

TABLE I
PARTICIPANT CHARACTERIZATION QUESTION

ID	Questions	Type
1	Do you have any experience with systems development out of the academic context?	Closed
2	Have you ever used any software repository? Example: GitHub	Closed
3	How do you consider your affinity with programming?	Closed
4	Please, select the items/languages you know.	Closed
5	Did you have a GitHub account before the course?	Closed

TABLE II
SCENARIOS AND RELATED CHARACTERISTICS

ID	Scenario	Characteristics
1	<i>“One or more members are the team’s source of expertise and are called upon to answer questions”.</i>	Source of learning
2	<i>“A developer actively participates by contributing with substantial code to the project”.</i>	Participation with code
3	<i>“The contributions of one member of the team were of high value for the project to achieve its objectives”.</i>	Content value
4	<i>“A team member devoted much time to the project, whether it’s documentation, development, or testing”.</i>	Long-time interaction with the project
5	<i>“The comments, suggestions, and/or criticisms of a team member were important for the project development”.</i>	Participation with comments
6	<i>“The good relationship among team members contributed to the project’s success”.</i>	Closeness to the GitHub project owner

TABLE II
DISCIPLINE ASSESSMENT

ID	Questions	Type
1	How was your experience with the discipline?	Close
2	If we offer the discipline remotely again, would you have any tips and/or suggestions for improvement?	Open

Examples of the coding process for transcripts and the resulting codes, categories, and major categories.

TABLE IV
ILLUSTRATION OF THE CODING PROCESS

Observation notes: The developers on the team knew the front-end and back-end. This made it easier to achieve a good result when delivering artifacts related to part of the project. Sometimes, developers S20 and S23 stayed up all night to project and execute on time.”			
Preliminary code	Focused code	Category	Category
Developers knew the front-end and back-end	Contribution of codes to the project	Technical	Participation with code
S20 and S23 stayed up all night to project and execute	Long interaction with the project	Social	Long-time interaction with the project