

Questionnaire: Pedagogical Evaluation of ASYMPTOTE

The subsequent presented questionnaire was assigned to the participants of the ASYMPTOTE Long-Term Curriculum (LTC). It has the following structure:

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Within this questionnaire, we pursue on three targets. We firstly aim to analyze the students' perception of the LTC to evaluate the course design and its conduct. Secondly, we aim to collect feedback on ASYMPTOTE in a systematic way in order to plan the further development of the system. Thirdly, we aim to requests participants' willingness to integrate ASYMPTOTE in their future math classes.

The section "Course experience" presents the items of the Course Experience Questionnaire (CEQ) following Ramsden (1991) as well as Byrne and Flood (2003).

References:

- Byrne, M., & Flood, B. (2003). Assessing the Teaching Quality of Accounting Programmes: An evaluation of the Course Experience Questionnaire. *Assess. Eval. High. Educ.*, 28(2), 135-145.
- Ramsden, P. (1991). A performance indicator of teaching quality in higher education: The Course Experience Questionnaire. *Stud. High. Educ.*, 16(2), 129-150.

The section "Willingness to use ASYMPTOTE" contains the adapted items of the Technology Acceptance Model (TAM) proposed by Davis (1986).

Reference:

- Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

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Introductory & final statement

Introduction

We ask you 30 minutes of your time to answer this questionnaire, which will allow us to assess your level of satisfaction with the course and also your experience in using ASYMPOTE and its features. Your data will be collected anonymously and treated with the utmost respect for privacy. The results will be analysed and presented in aggregate form only.

Thank you in advance for your availability!

Closing

Done! Thank you very much

Leave a comment or any additional feedback/information you would like to provide.

Long text answer

General Information

E-Mail Address

Name & Surname

Gender

- Female
- Male
- Prefer not to say

Age

- Younger than 20
- 20-24
- 25-29
- 30-39
- 40-49
- 50+

Which university do you belong to?

- Bielefeld (Universität Bielefeld)
- Catania (Univeristà degli Studi di Catania)
- Frankfurt (Goethe-Universität Frankfurt)
- Porto (Instituto Superior de Engenharia do Porto)
- Rhodes (Πανεπιστήμιο Αιγαίου)

You are ...

- A university student that will become a teacher
- A former university student which currently is no in-service teachers
- An in-service teacher

Only for university students aim to become a teacher

What is your field of study?

- Education (not mathematics)
- Mathematics Education
- Pure or Applied Mathematics
- Other: _____

Which year of university are you attending?

What is your mode of study?

- Wholly full time
- Wholly part time
- Wholly external
- A combination of these

The modules of the LTC

Module 1: Theoretical framework

Editorial Note: Module 1 presents the theoretical background which underlies the development of the ASYMPTOTE system, e.g., including references on the design and conduct of online courses.

How much did the concepts of the theoretical framework help you conceptualise the integration of ASYMPTOTE into your practices as a math tasks/learning graph designer on ASYMPTOTE?

5-Point Likert Scale from 1 (not helpful at all) to 5 (very helpful)

Explain your previous answer.

Long text answer

Which elements of the theoretical framework best supported your development as a math tasks/learning graph designer on ASYMPTOTE?

Long text answer

Which elements were ineffective or what adjustments could be made in the theoretical framework to improve the experience?

Long text answer

Module 2: Teacher's perspective & Module 3: Student's perspective

Editorial Note: Module 2 deals with the use of the ASYMPTOTE web portal including the creation of tasks and learning graphs. Module 3 focusses on exploring the ASYMPTOTE app.

How much do you agree with the following statements?

5-Point Likert Scale from 1 (strongly disagree) to 5 (strongly agree)

1. Registering myself on the ASYMPTOTE web portal was easy.
2. I can orientate myself in the web portal.
3. Creating tasks is intuitive.
4. Creating learning graph is intuitive.
5. It was easy for me to learn how ASYMPTOTE web portal works.
6. It was easy for me to learn how ASYMPTOTE app works.
7. The interaction between web portal and app was easy to understand.
8. It was easy for me to learn how Digital Classroom works.

How easy do you think it is to create a math task of the following type?

3-Point Likert Scale from 1 (not easy at all) to 3 (very easy)

1. Training
2. Reasoning
3. Modelling
4. Challenging
5. Supportive

If there are tasks that you have indicated as "not at all easy" or "quite easy" to create, why do you think this type is not fully accessible to you?

Long text answer

Do you have any suggestions or requests for task type?

Long text answer

How often have you used (or do you plan to use) the following answering formats?

5-Point Likert Scale from 1 (Never) to 5 (Always)

1. Exact value
2. Vector (exact value)
3. Interval
4. Vector (interval)
5. Set
6. Fraction
7. Multiple choice
8. Fill in the blanks
9. Information station

Do you have any suggestions or requests for answering formats?

Long text answer

What difficulties did you face when using ASYMPTOTE in creating tasks or learning graph?

Long text answer

What difficulties did you face when using ASYMPTOTE in running a learning graph?

Long text answer

Module 4: Teaching & learning experience

Editorial Note: Module 4 consists of a peer review of the created contents and a micro-simulation of using ASYMPOTOTE in class. The micro-simulation contains the administration of the Digital Classroom by a teacher as well as the experience of using the Digital Classroom from a student's perspective.

Playing the role of the teacher

What mathematical topic did you and your group choose?

Long text answer

Why did you choose this topic?

Long text answer

For students at which school level is the learning graph you have designed?

Primary

Lower secondary

Upper secondary

University

Which of the following options applies to the challenging/supportive tasks you designed for your learning graph?

1 challenging and 3 supportive

2 challenging and 2 supportive

3 challenging and 1 supportive

Other: _____

Why did you make these choices?

Long text answer

Describe with three adjectives the simulation of administering your learning graph to another group of students (i.e. the one in which your group played the role of teacher)

Long text answer

Express your level of agreement with the following statements

5-Point Likert Scale from 1 (strongly disagree) to 5 (strongly agree)

1. It was EASY to monitor the students through the Digital Classroom

2. It was USEFUL to monitor the students through the Digital Classroom

Using the Digital Classroom chat, your students have sent ... to you:

- text messages
- photos
- audio messages
- none of the above

During the monitoring of the students with the Digital Classroom, what actions you have carried out:

- focus on class overview
- focus on individual via the event window
- use the chat to reply to messages received
- use the chat to send messages

How did you perceive the Digital Classroom from a teacher's perspective?

Long text answer

Was there a task (or more than one task) that created problems for the students?

- Yes
- No

If yes, how did you intervene?

Long text answer

Did this simulation meet your expectations?

- Yes
- No

Why?

Long text answer

In the light of the simulation, your learning graph ...

- remains as it was designed
- one or more tasks need to be modified

How useful do you think the simulation in which your group took on the role of teacher was?

5-Point Likert Scale from 1 (Useless) to 5 (very useful)

Why?

Long text answer

Playing the role of the student

Describe with three adjectives the simulation of the execution of the learning graph of the other group of students (i.e., the one in which you and your group played the role of students).

Long text answer

Why and when did you use hints?

Long text answer

When and why did you used the chat?

Long text answer

Did this simulation meet your expectations?

Yes

No

Why?

Long text answer

How useful do you think the simulation of the execution of the learning graph in which you and your group took on the role of learners was?

5-Point Likert Scale from 1 (Useless) to 5 (very useful)

Why?

Long text answer

Course experience

Express your level of agreement with the following statements

5-Point Likert Scale from 1 (strongly disagree) to 5 (strongly agree)

1. The teaching staff of this course motivated me to do my best work
2. It was always easy to know the standard of work expected.
3. The workload was too heavy.
4. To do well in this course all you really needed was a good memory.
5. The course developed my ability to utilize digital technology in teaching mathematics.
6. The staff put a lot of time into commenting on my work.
7. I usually had a clear idea of where I was going and what was expected of me in this course.
8. I was generally given enough time to understand things I had to learn.
9. The staff seemed more interested in testing what I had memorised than what I had understood.
10. The course developed my ability to teach online.
11. The staff made a real effort to understand difficulties I might be having with my work.
12. It was often hard to discover what was expected of me in that course.
13. There was a lot of pressure on me to do well in this course.
14. Too many staff asked me questions just about facts.
15. The course developed my ability to design math learning tasks to use in ASYMPTOTE.
16. The teaching staff normally gave me helpful feedback on how I was going.
17. The staff made it clear right from the start what they expected from students.
18. The sheer volume of work to be got through in this course meant it couldn't all be thoroughly comprehended.
19. The course helped me to learn how to plan and implement math teaching using ICT.
20. My lecturers were extremely good at explaining things.
21. The teaching staff worked hard to make their subjects interesting.

Willingness to use ASYMPTOTE

Express your level of agreement with the following statements

5-Point Likert Scale from 1 (strongly disagree) to 5 (strongly agree)

1. I think that ASYMPTOTE is easy to use.
2. I think that ASYMPTOTE is useful to assist me in teaching mathematics.
3. I am attracted by the visual appeal – Graphical User Interface of the ASYMPTOTE.
4. I feel that ASYMPTOTE is interesting.
5. I am interested in using ASYMPTOTE.
6. I will recommend other teachers to use ASYMPTOTE.
7. It is easy for me to familiarize myself with ASYMPTOTE.
8. I think ASYMPTOTE makes me more effective in teaching mathematics.
9. The tasks and the learning graphs in ASYMPTOTE are attractive.
10. I feel that ASYMPTOTE is exciting.
11. I like using ASYMPTOTE to teach mathematics.
12. I predict I would use ASYMPTOTE in the future.
13. It is easy for me to handle ASYMPTOTE.
14. If I use ASYMPTOTE to teach mathematics the students will learn more easily.
15. The whole experience of using ASYMPTOTE is attractive.
16. I feel that ASYMPTOTE is pleasant.
17. Using ASYMPTOTE is a best way to teach mathematics in Emergency Remote Teaching.
18. I will familiarize my students to ASYMPTOTE.

Depending on how you answered earlier, why do you think you should continue/not continue using ASYMPTOTE?

Long text answer