

INTERACTION ANALYSIS IN AN INTERNATIONAL ASYNCHRONOUS LEARNING ENVIRONMENT

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Abstract

Interaction Analysis has been explored for the initiating topics, turn taking, and asking and answering questions in face-to-face learning environments during the last decades. This study investigated the form and sequence of the questions and answers in an asynchronous environment from a non-interventionist point of view. To conduct the research, 16 questions and answers from the discussion boards of an eight-week international online research course from 30 participants were copied, classified, and analyzed according to the Hmelo-Silver and Barrows' (2008) grid. All the questions were classified as long-answer, short-answer, and task-oriented questions and their frequencies were calculated. Also, the presence of the Initiation, Response, and Feedback/Inquiry (IRFI) pattern was examined

The results indicated that the largest number of questions fell under long-answer types and the participants were more motivated in responding the long-answer queries relating directly to the immediate studied materials or asking about definitions and personal ideas. The findings supported the idea that IRFI pattern might not be applicable in asynchronous environments. Therefore, the instructional patterns need to be designed carefully according to the needs of the new contexts. This study could enhance meaningful interactions in online educational settings such as language learning, teacher training, and professional development.

Keywords: Interaction analysis; asynchronous learning environment; face-to-Face learning environment; synchronous learning environment; IRFI

1. Introduction

Physical distance has led to an increasingly developing variety of online learning techniques in education, such as webinars, videoconferencings, virtual classrooms, and discussion forums. Studies show that today four million American students are taking online courses (Allen & Seaman, 2008). In most educational systems, the virtual spaces are preferred to face-to-face teaching and learning environments in the professional development of teachers and

graduate students (Silva, 2013). On the other hand, 90 percent of the institutions in the United States hold asynchronous online courses and 80 percent would use it as the primary mode of their courses (Waits & Lewis, 2003; cited in Andresen 2009). Thus, the new developments require creative ways of studies on the analysis of interactions between participants in general and the type of questions and answers they employ, in particular, to improve the quality of teaching and learning in virtual learning environments.

Early classroom discourse analysis started when scholars such as Kumaravadivelu (1991) found some mismatches between the teachers' intended meaning and learners' interpretation (Tsui, 2012). Regarding the distance between the teacher and learners in terms of time and place in virtual classrooms and, hence, the gap between the stages of initiation, response, feedback, and inquiry modes (IRFI) within asynchronous learning environments, today, the same mismatches are realized as obstacles in the online courses between the tutors' intended meaning in questions and the participants' answers and comments on the discussion board of online courses which may lead to serious learning problems (Andresen, 2009).

Previous studies have based their analysis of discourse in virtual environments on the patterns of interactions (Powers & Fuller, 2001), discourse functions (Sotillo, 2000), the quality of interactions (Kanuka, 2011), the characteristics of interactions within a specific website (Millard, 2010), and the discourse analysis of teachers (Zayed & Bali, 2015). However, very few investigations in the literature have paid attention to the elements of interactions such as questions and answers and the relationship between the type of questions and the participants' contribution in discussions in an asynchronous environment.

The aim of this research is twofold. First, employing Hmelo-Silver and Barrows' (2008) model, categorizing the type of questions and responses in order to find whether the type and content of the tutors' initiation questions affect the type of the participants' answers and their contributions. Second, examining the sequence of the IRFI pattern in an asynchronous environment to address the difference in sequencing in online spaces. Then, through its findings, the study states the implications for improving teacher discourse, teacher-student, and student-student interaction, and need for designing new instructional patterns in online training.

2. Interaction in virtual environments

As the Internet is globalized and online communication among people is more socialized, a plethora of online platforms is designed for different purposes. Sometimes, different groups of participants or organizers create localized networks for specific purposes to facilitate

interactions among group members (Davies, 2008). In educational settings, the online context is used for conducting courses, conferences, webinars, and so on. When the context of communication among educators changes, inevitable discourse changes are expected in the new context accordingly. They create new ways for effective interactions such as sound effects, hyperlinking, and emoticons that affect meaning and interpretation (Davies, 2008). Therefore, as the variety of online contexts for virtual education increases, so do the complex patterns of online interaction analysis in education.

Herring (2001) defines computer-mediated discourse as the type of communication between human beings through networked computers. Similarly, as one type of computer-mediated communication, Virtual Asynchronous Environment (VAE) can be defined as an internet based system of education through which the instructor posts clear topics, readings, and activities on the introduced platform and the learner does the required assignments on his/her own pace using the 'anytime/anywhere' system of education (Silva, 2013).

Sotillo (2000) investigated discourse functions via synchronous and asynchronous discussions and stated that discourse features in these modes of online communication are different and that can be employed for varied instructional purposes. Sotillo stated that there are similarities in discourse features between asynchronous discussions and question-response evaluation sequence of traditional language classrooms; however, the identified discourse functions are different from those present in synchronous discussions. In another study, Silva (2013) examined the interactions in a virtual learning environment for pedagogical training and suggested conducting further studies on the analysis of foreign teachers' discourse. She also claimed that interventions would improve if the teachers used the virtual communication spaces systematically.

However, dealing with the importance of interactions as a crucial component of online discussions, Woo and Reeves (2007) emphasize the role of the instructor in creating and leading meaningful interactions and state that it is difficult to find meaningful interactions and learning in online discussions. They practice more opinion sharing rather than discussions. Woo and Reeves suggest increasing the quality of asynchronous web-based learning and believe that there is considerable room for improvement of design and utilization of interactive learning environments. Also, in a review, Andresen (2009) argues about the importance of the instructor and the achievement of deeper learning in the literature. He believes that deeper cognitive complexities require spontaneous questions and answers to be clarified, which is something that it is lost in asynchronous learning environments. Consequently, the role of the form of questions in understanding concepts is emphasized and

it is believed that it necessitates the analysis of questions and answers which are posted on the platform. Andresen also highlights some obstacles of asynchronous environments, such as time and place in problem-based discussions and suggest that instructors should be aware of the type of the appropriate questions for these kinds of learning spaces.

An and Levin (2001) analyzed messages on a web board discussion recorded from two graduate classes and identified six major patterns of online educational discourse: inquiry-based discourse, information sharing, reading reflection, analytical evaluation, argumentative discourse, and project-based discourse. Focusing on the instructional patterns found in asynchronous communication, they compared the identified patterns to those found by Mehan (1979) in his analysis of the traditional classroom-based instruction. Accordingly, they suggested designing online instructions in terms of opening, main discourse, and the transition of Mehan's study.

Another study on the patterns of online communication was conducted by Powers and Fuller (2001), who traced students' interaction in an asynchronous learning environment and its impact on collaborative learning. They came to similar conclusions as An and Levin's study, proving that the functions of asynchronous communication follow a traceable pattern similar to the traditional educational environment.

The classroom discourse structure consists of the four moves: teacher Initiation (I), Student response (R), teacher Feedback (F), or Evaluation (E) of the students' response. Studies show that the IRF structure provides most classroom interactions (Wells, 1999). In a study, Laferriere and Lamon (2011), following their previous paper (Laferriere & Lamon, 2010), described knowledge-building principles and knowledge forum. In their paper, they focused on the kinds of questions students asked and their subsequent discourse/ explanation. They used Hmelo-Silver and Barrows' (2008) model and demonstrated that the observed level of explanation in student discourse contrasts with the IRE classroom discourse structure. Actually, finding this contrast led to provide the IRFI (Initiation, Response, Feedback/further inquiry) pattern as a pattern of classroom sequence in an asynchronous context.

3. The study

The present study was conducted to establish whether the type of the initiated question by the teacher affects the type of responses and to examine the interaction sequence in an asynchronous environment. It was executed within the discussion sections of an international online course named "Developing your Research Project" which was conducted by two professors from The University of Southampton and monitored by the Future Learn

organizers. The students who participated in this online course were 189 learners from different countries who could select one of the professors to follow his/her feedback or to post any further inquiries. The course was an eight-week online course. Once a week, on Mondays, instructions along with the assignments were posted on the specified platform introduced from the organizers at the time of registration through the participants' emails. The participants completed the posted assignments, step by step, at their own pace during the week. Each pack of a week was named with a main topic and consisted of three or four parts, each with a specified subtitle. Instruction and assignment pack included articles, reviews, videos, exercises, and discussions. Each pack of a week started with an introductory video and ended with a section called "Summary Activities" consisting of a review of the week contents and a reflection move. Reflection was triggered by questions asked about the learners' ideas about the usefulness and the quality of the materials during the week. A feedback page was designed on the platform of the program to answer the learners' further questions or posting feedback in relation to their assignments. The participants could check this page at any time they needed. A sample page of the platform is presented in the Appendix. It should be mentioned that a written permission was received from the course organizers to use the required sections of the course. They agreed upon referencing the team and keeping the participants' names unidentified for the purpose of the publication.

In most recent studies, interaction analysis has been described in different ways. Powers and Fuller (2001) used Salmon's (2001) model of learning in the asynchronous environment based on the levels and types of interactivity. This model was suitable for investigating the levels of satisfaction with the environment. Also, in some studies, the scholars distinguished knowledge-building discourse from problem-solving discourse in their analyses. They focused on problem-based learning in specific contexts (Scardamalia & Bereiter, 2006). However, in the present research, to analyze the interaction between tutors' questions and participants' answers within the pattern of IRFI (initiation, response, feedback/inquiry), Hmelo-Silver and Barrows' (2008) model was considered suitable and applied. The model identifies three groups of questions: task-oriented questions (monitoring, need clarification, and request/directive), short-answer questions (verification, concept completion, and quantification), long-answer questions (definition, example, interpretation, and judgments).

The total population who registered for the online course of "Developing your research project" in an asynchronous environment consisted of 1,539 international learners, male and female, from different majors, out of which 189 participants remained active by the

end of the eighth week. To answer the research questions, the total of 17 discussion sections were copied from the archive of the FutureLearn platform where the last 30 answers to the postings were selected, described and analyzed from each. It means that for each discussion section, there was one question and 30 answers.

According to Silva (2013), the interactions between participants in online courses should be available to the investigators in order to be carefully analyzed and interpreted. Since the data for the present study were collected from an asynchronous learning environment, the instrument for data collection was the platform of the course from the University of Southampton.

4. Data collection and analysis

To collect data for the purpose of the present study, analysis and interpretation of the moderators' postings and the participants' answers, a written permission was received from the team of the organizers through sending a request email stating that the FutureLearn Organization and the University of Southampton would be referenced and the participants would be kept anonymous during the analysis and at the time of the publication. Then, during eight weeks of conducting the course, all discussion sections through which the questions were posted and the participants answered or commented were selected from the packs of weekly instructions and assignments. In each week, two discussion parts were included. Only the first week had three discussion parts because the first one was allocated to asking participants to introduce themselves. The first question of the first week was not included in the analysis since it was used to collect learners' personal information if needed. Therefore, a total of 16 questions and 480 responses (for each question 30 responses from the active participants were selected) were copied and saved from the archive platform of the University of Southampton. Table 1 illustrates the number of discussions, participants, and the main questions for each section.

Table 1. A schematic representation of the selected questions and the number of respondents for each

WEEK	Number of participants	Main questions
WEEK 1		
Discussion 1	1,539	Where are you from?
Discussion 2	1,291(83%)	What do you think you can gain personally from undertaking a research project?
Discussion 3	830 (53%)	Reflection: What have you found to be good, useful, or interesting this week?
WEEK 2		

Discussion 4	503 (32%)	Why keep a learning/ research log?
Discussion 5	490 (31%)	What did you find that was good or interesting about the peer review activity?
Discussion 6	382 (24%)	Reflection: What have you found to be good, useful or interesting this week?
WEEK 3		
Discussion 7	359 (23%)	Reflection: What have you found to be good, useful or interesting this week?
WEEK 4		
Discussion 8	337 (21%)	What do you think might be a suitable methodology and why?
Discussion 9	230 (14%)	Reflection: What have you found to be good, useful or interesting this week?
WEEK 5		
Discussion 10	225 (14%)	How can you become proficient at note taking?
Discussion 11	205 (13%)	Reflection: What have you found to be good, useful or interesting this week?
WEEK 6		
Discussion 12	170 (11%)	Is there anything about referencing that surprised you?
Discussion 13	183 (11%)	Reflection: What have you found to be good, useful or interesting this week?
WEEK 7		
Discussion 14	216 (14%)	What is your preferred way to write and why?
Discussion 15	128 (8%)	Reflection: What have you found to be good, useful or interesting this week?
WEEK 8		
Discussion 16	140 (9%)	What can we learn from others about presenting well?
Discussion 17	189 (12%)	Reflection: What have you found to be good, useful or interesting this week?

For the purpose of finding the relationship between the type of the questions and answers and examining the IRFI pattern in an asynchronous platform, the questions and answers were collected from the course archive and analyzed using Hmelo-Silver and Barrows' (2008) model. In order to identify the relationship between the type of the questions and answers, the questions were classified into three categories of task-oriented questions, short-answer questions, and long-answer questions. Then, the answers to each question were copied, analyzed, and interpreted with respect to the relativity to the questions and in terms of the quality to find out to what extent the intended meaning of the tutors' was achieved. In the end, the pattern of interactions was examined against the pattern of IRFI in a face-to-face classroom interaction. Table 2 presents the classification of the questions (Initiation move) and the number of responses to each type.

Table 2. Types & number of questions on the Initiation move & the number of responses

Type of the Qs	Task-oriented Qs	Short-answer Qs	Long-answer Qs
# Discussions	2, 4, 5, 8, 12, 16 (35%)	12 (5%)	3, 4, 6, 7, 9, 10, 11, 13, 14, 15, 17 (64%)
# Responses	20.8%	5%	19.8%

Table 2 shows that 35% of the initiation questions were of the task-oriented type, 5% were short-answer questions and 64% were long-answer questions, which indicates the largest body of the questions. Concerning the responses to each type of questions, it is observed that 20.8% of the participants responded to the task-based questions which is the largest number of participants, only 5% answered the short-answer question (Discussion 12), and 19.8% answered long-answer questions.

5. Findings

The asynchronous educational spaces are different from other environments. Such online programs allow for multiple responses to one single question, are considered as threaded discussion forums and are not time-dependent. Moderators try to facilitate communication among the participants. In respect of the present study, on Mondays, the initiation questions were posted from teachers and students would complete the assignments at their own pace. If some of the learners fell behind with some tasks in the prescribed time, they could complete them later. The responses to questions were stored on the platform so that the other learners could read and comment on them. Both teachers monitored the participants' responses during the week and commented on some ideas or answered follow-up questions from learners. In order to understand how the type of the questions affects the type of the answers and to describe the IRFI interaction pattern in an asynchronous environment, all 16 questions and 480 responses were classified into task-based, short-answer and long-answer and described

Discussion 2 includes one main question following a clarification statement so that the learners know how to answer the question and how to do the tasks in a virtual environment. It concerned the things the learners can gain from undertaking a research project:

- “What do you think you’ll gain personally from undertaking a research project?”
- “Do look at the other learners’ responses and try to respond to at least one other comment as this will help generate discussion between you. You can also ‘like’ comments that you find particularly interesting or relevant.”

This question is a task-oriented one that was posted under the title of “Why do academic research?”, after exposing the participants to a couple of videos about “Academic Research” and “Why are the transferable skills important in research?”. The question includes underlying thinking and makes a connection to previous sections of the lesson. In response to this question, 1,291 (83%) learners out of the first 1,539 registered group gave their answers. As it was mentioned in previous sections, for the manageability of the study, the last 30

responses were included in the data collection procedures. Most responses were directed to the intended meaning of the tutors:

- *Improving my communication and response others as positively by using course materials.*
- *Independence, knowledge, meeting timely deadlines and how to use research resources usefully.*
- *I have many subjects in which I would like to research and become a research writer in as many subjects as possible. Research gives a multi-dimensional outlook for approaching any subject. The way of approach gets enriched by research. If I research in Marine Science and International Relations, I can enhance my knowledge in both Arts and Science. I can further my research and become useful.*

However, a few irrelevant or indirect long and short responses were given as well:

- *If I am undertaking a research project, according to the Chris Fuller (lecture_1. 5) Instructions and carry out, then I will give the guarantee of my success.*
- *An experience of what university will be like as the majority of that is an independent work. There is also the aspect of gaining an idea of what you will actually study at university which is also interesting to know before you go there.*
- *I am new to Futurelearn, and this course fits in perfectly with my Bachelor's of Media and Specialist Pathways. My course is compiled with cultural research on how we have a close relationship to mass media. I feel, since I am going into the Communication/Nursing field, I need to have a good understanding on how to compose a critical methodological framework, that can be original yet can be understood by different theorists. These transferable skills are needed for me to move from the media field in the health communication field.*
- *To develop the transferable skills in me.*
- *It will help me in college.*

Out of the analyzed responses, only one of them included an inquiry which led to further interaction between 2 participants. Also, there were 14 interactions among the respondents through just liking the others' ideas.

Discussion 3 was a reflective question about the participants' ideas about the quality of the materials during the week. It is a type of open-ended and long-answer question that follows a second stimulating question in order to seek more collaboration and feedback. The

question is: “What have you found to be good, useful, or interesting this week?” and “What questions, if any, have arisen for you?” Immediately after the questions, a reminder appears that encourages students to respond to others’ comments and generate discussions. Only 830 (53%) learners answered this question and left their comments, which were almost half of the total number of the candidates (1,539) on the first day. The answers were one-word, two-word, or given in a couple of long sentences explaining the favorite parts of the week. In spite of the tutors’ effort to encourage learners to engage in discussions or generate more questions, one of the responses was realized to be irrelevant and none of the participants posted any further questions arisen for them. Also, 16 learners liked the comments and only 3 of them commented on the responses.

Discussion 4 was posted on the second week of the program after an introductory video. This part included a long-answer question such as: “Why keeping a learning/research log?” Then, tutors continued with a few lines of explanations about how to keep a track of the research. The following questions were: “Why else do you think keeping a learning research log could be useful? Can you think of any tools or apps that might help you with this? Or have you got any experience of using any of the tools that are mentioned?” The main question includes an underlying assumption related to the course materials, seeks the reasons and is an initial explanatory query. In addition, it is a task-based question that is followed by a few mixed types of questions requiring long and short responses. However, in spite of the tutors’ attempts to encourage all the participants with different learning styles to respond and comment on the platform, the number of the participants who responded to this question decreased to 503 (32%). Some of the short and long responses were as follows:

- *Research is time consuming and often without a research log, there is a loss of organization. Keeping a research log allows you to keep track of all the information gathered and their sources which will help in the long run.*
- *As explained, it enables the researcher to keep track of the development/progress of work from one stage (crude or ambiguous...) to another stage (more perfect and well structured).*
- *Evernote all the way!*
- *Have any one of you used a software called the brain?*

As it is realized, the first and second responses are answers to the first question in a comprehensive way. However, the learners have not provided any idea for the following questions. The third response is a short and direct response to the second and third questions

that does not present any reason for using any software. The last response is not related to the posted questions and the learner asks a similar question from other participants. A careful analysis of the responses shows that only a few participants answered this part completely.

Discussion 5 concerned the quality and usefulness of the peer review activity. In this section, a question followed the main question in order to stimulate the participants to think more deeply in relation to the previous assignment that was a peer review task. A reminder appears after the questions in order to make connections to the research log that was introduced in the previous activities and to receive and reflect on the others' assignments. Respondents to this section were 490 (31%) learners. Responses to this section also included short and long sentences or even one phrase like: "very good". Mostly they appreciated their peers for their feedback on their activities, not a clear answer to the posted questions. Only one comment appeared on the board and 10 liked the peers' ideas. None of the responses included any further question, according to the content of the queries.

Similarly, further reflection questions (Discussions 7, 9, 11, 13, 15, 17) include almost the same number of irrelevant, short, and long responses which indicate a type of misunderstanding or mismatches between questions and answers. Among other discussion sections during the following weeks, Discussion 16 and the relevant responses were radically different. The main question was: "What can we learn from others about presenting well?" Then, the tutors give an explanation about "presenting research projects and how to present well". The questions were followed by a list of seven step-by-step tasks in relation to the main question. The list of the activities appears below:

1. *Describe a situation where you saw somebody present really well.*
2. *List the characteristics of those presentations that you have really enjoyed and found most useful.*
3. *List the characteristics of presentations that have bored or confused you.*
4. *What is your preferred method for presenting and why?*
5. *What are your biggest fears when it comes to presenting?*
6. *What do you think are your strong and weak points?*
7. *How have you thought you might overcome some of those fears and weaknesses?*

To answer the questions of this section and to do the required activities, 140 (12%) participants posted their responses. Although the number of the respondents declined, they covered all the parts of the question.

Having analyzed the number of participants keeping track of the activities and the categorization of the types of questions, it can be observed that 35% of the questions were

task-oriented questions, 5% short-answer questions, and 64% long-answer questions. Also, the decreasing number of participants indicates that less than 10% kept track of the activities to the end of week 8, which shows weak interaction between tutors and participants. Furthermore, the results indicate that less than 50% of the learners made comments on their peers' work, liked others' comments, or referred to the tutors' feedback. A review of the percentages of the interactions and the type of the questions and answers reveals the fact that there might be a kind of lack of interest, technology illiteracy, or time management problems regarding keeping up with the pace of the course assignments.

6. Conclusion

Technological innovations and expanding use of computers and exploiting the Internet as a means of interaction have appeared to be some of the inevitable aspects of people's lives. Through this global revolution, educational institutions have been successfully evolving to be able to compensate physical distance by developing a myriad of systems and tools to be incorporated to achieve a variety of educational goals. Accordingly, instructional materials have been shifted into downloadable texts through platform delivery system within different online environments. These improvements have shed light on the importance of studies of interactions in virtual learning spaces, in general, and teachers' discourse, in particular.

The present study was designed to determine the relationship between the type of questions and responses, which are the most important elements of classroom interaction and the learners' participation in an asynchronous learning environment. Moreover, the current study set out with the aim of analyzing the sequence of classroom interaction, IRFI, in such spaces.

The findings indicate that the largest body of questions fell in the type of long-answer questions (64% of the questions presented in 16 discussion boards). The number of the participants who responded these questions were 19.8%, which indicates a kind of interest among learners to collaborate in responding the long-answer questions asking about definitions and personal ideas about the course materials. The lowest percentage of responses was achieved for the short-answer question (5%) that was only one yes/No question asking about any referencing that surprised them. The lowest number of respondents participated in this section of discussions. The remaining questions fell in the area of task-based questions, which occupied 35% of the questions with the most number of participants.

It can be noticed that learners may be more motivated to answer the questions when the queries make direct connections to the immediate materials that they had studied. Also,

the number of irrelevant responses to each of the questions may point to some probable misunderstanding between the tutors and the learners or some mismatches between the types of questions and answers. In addition, the examination of the sequence of interactions and the number of participants in each mode indicates that as long as the course proceeds, the number of first registered participants decreases ranging from 83% to 8% in the last weeks during the course. The decline in the number of participants may be related to the nature of asynchronous environments that are designed according to some time intervals between the tutors' question, learners' response, and the lack of immediate feedback. Technical difficulties (Hara & Kling, 2000) and technology illiteracy might be other reasons behind this problem. Finally, fewer than 10% of the participants who registered for the course remained active to the final sections of the assignments.

As regards the interaction sequence of the course within the IRFI model (Laferriere & Lamon, 2010), the findings indicate that Initiation (I) and Response (R) are central; however, very little further Inquiry and Feedback moves were observed in the interactions between tutors and learners. Also, very few participants commented on their peers' responses. This might be attributed to the difference in the teacher-student interaction between face-to-face, synchronous, and asynchronous environments.

These findings provide further support for Silva's (2013) claims on the teachers' systematic use of virtual communication spaces; however, they do not support the assumption that "the asynchronous structure of communication promotes higher order thinking skills among the students in a distance education course" (Powers & Fuller, 2001, p. 17). An implication of this study is that carefully creating questions and topics, designing appropriate online platforms according to the needs of the virtual learners and the specifications of the spaces may lead to improving interaction between teacher-student and student-student and consequently enhance learning. Also, it may help to stimulate meaningful interactions in online teacher training courses and professional developments. More research is required to describe the interactive process of online communication, in general, as well as in asynchronous interactions, in particular.

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Appendix
The University of Southampton
A Sample platform of “week 2” Instructions & Activities

1. Week 2: Drafting a research proposal

1. Drafting a research proposal

We will be discussing the process of selecting a suitable theme and topic for a research project. By the end of this week you will be able to identify key research questions drawn from your draft research proposal & hypothesis

- [2.1 The freedom to choose your topic ... \(Video\)](#)
- [2.2 Why keep a learning /research log? \(Discussion\)](#)
- [2.3 Top tips: what to think about before you get started ... \(Video\)](#)
- [2.4 Exercise: how do you pick a topic? \(Article\)](#)
- [2.5 Exercise: creating a draft hypothesis and initial research questions \(Video\)](#)

2. Developing your ideas

In this peer review activity you are encouraged to share your draft hypothesis and initial research questions and for you to feedback on each other's ideas to develop them further.

- [2.6 Peer review activity: how to get the best out of this \(Article\)](#)
- [2.7 Developing a draft research proposal \(Assignment\)](#)
- [2.8 Developing a draft research proposal \(Review\)](#)
- [2.9 Developing a draft research proposal \(Reflection\)](#)
- [2.10 Questions about the peer review activity? \(Discussion\)](#)

3. Week 2 - summary activities

In this final activity we summarize the main points covered this week and encourage you to reflect on what you've learnt.

- [2.11 Review of week 2 \(Article\)](#)
- [2.12 Reflection \(Discussion\)](#)