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CHAPTER 6
ANALYSIS AND REPORTING FINDINGS: CRITICAL
RESPONSES

"And above all, watch with glittering eyes the whole world around you because the greatest secrets are always hidden in the most unlikely places. Those who don't believe in magic will never find it."
— Roald Dahl

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6.1 Students' critical responses in critical thinking

6.1.1 Introduction

This chapter considers and presents findings of students' critical responses. Critical responses were responses elicited when students' viewpoints, perspectives and ideas were challenged during the interaction and discussion with their group members in the group learning. In Chapter 3, the study highlights that promotive interaction and constructive controversy theory provide the opportunity for students to engage in critical thinking.

This chapter, therefore, focuses on the students' responses, i.e. actions taken during the interaction and discussion in the context of group learning, especially when group members challenged their views or ideas. These actions were contextually based and they were termed *critical responses*.

Students explained that they responded in a number of ways during their interaction and discussion in group learning, especially when their ideas/ views were challenged by their group members.

- Listen
- Reflect
- Explain
- Seek more information /research
- Debate/argue
- Agree quickly

However, after further interpretive analysis, three critical responses stood out.

- CR1: Debate before coming to a view
- CR2: To be convinced
- CR3: To understand

The critical response were prompted when students intended to raise questions about the presented alternative views, ideas and perspectives relating to the FFM case study before the group agreed on the final solution. However, there were indicative reasons for prompting the critical responses. This study also

identified and suggested that students brought in their views on the 'correctness of the answer' to the group learning. This is considered in section 6.2.

Drawing from the analytical framework of the study, the focus of the chapter is on *Product* of the 3P model. The significant variations in the ways in which students responded within these three responses are considered from sections 6.1.2 to 6.1.4.

Table 6.1: Students' critical responses

CR1	CR2	CR3
S2	S7	S1
S12	S15	S3
S14	S17	S4
S23	S20	S8
S27	S21	S10
		S11
		S19
		S22
		S24
		S25
N=5	5	10

6.1.2 Findings: CR1 – To debate and convince others before coming to a view

These students wanted to prove themselves correct about their views and perspectives when they were challenged during group learning; these responses were about convincing others because students thought they were right in the first place. They changed their minds and agreed with their members in the end, but students debated first before reaching agreement. The following significant variations in the way students responding to the conflict of views and ideas were identified and are considered below.

a. Coming to a view based on evidence

S12 shared that she would first explain her points if such there was conflict of views in the group. However, if she felt she was right about her ideas, she would then debate with her group members.

'OK. How do you feel when those ideas that you think is really, really good for the case, yes, but is not taken up? How do you feel about situation like this? Um, I'm not feel sad, but, um, I will explain my ... I will explain it, but if they don't take it that's all, because I have explained what I ... what I'm thinking about, so it's ...
Yes, so do you like to argue with your group members when you think that it's right?
Yes, this time I very like, um, debate with ... debate with my group mates. Um, um, it's the real way to find out, um, the result or find out the new opinion together.' (S12, F, 262)

When she was asked further how she would debate with her members, she stressed that showing them evidence was the way to prove her point, and she would look for more evidence if other members still did not agree with her.

'How do you debate about certain issues?
Just show them the, um, the evidence to prove my results, for example, um, the website ... all the action that the company have done, um, or the book. (S12, F, 277)

(Laugh) OK, yes. What if they do not convince?
Um ... What would you do? Um, I will find out more evidence to prove it or if they not really agree with it ...' (S12, F, 302)

Similarly S2 could only accept alternative views after a debate during the interaction and discussion (S2, M, 128). He felt that this debating process was 'critical' (S2, M, 89). When he was asked whether he could accept the arguments easily, he commented that it was not easy for him unless there was proof given to convince him that others were right.

'Can you easily accept (arguments)?
Not easily, but after a debate if anybody proves that they ... he or she ... my friend is right, then I will accept it.' (S2, M, 146)

S27 would continue to argue for her point of view, and if the arguments were not 'powerful' (convincing) enough for the group, she would search for articles that supported her points in order to convince the group.

'OK. Um, so if ... assuming you ... in a group learning situation you suggest something and then your group member actually does not want it and he debate with you and he sort of challenge your view, can you tell me how would you feel and what would do?

And, um, maybe at first I just argue some points, but I think it is, um, not powerful (convincing), so in the next group meeting ... before the next group meeting **I will raise some papers relate to my point** and then, um, I ... in the next group meeting **I will show they my papers and, um, what is ... what they say that support my point and then just show ... just tell them this is what I think and this is what the other authors that ... the view of them support my point.**' (S27, F, 185)

b. Compare ideas and explain to 'win' over

S14 would first explain her ideas and views. She stressed that she would compare her views with others to see who was right at the end. She would try to convince others if she believed she was right. Interestingly, S14 described her response as if it were a 'tug of war', something to win over. This was evident in her responses where she explained that she would change her opinion if she felt other members had 'won' her over.

'... your views and your ideas, but however it was challenged by your group members and maybe even rejected, can you tell me how would you feel or what would you do?

Um, to ... I'd try ... if I believed it was that ... like it was ... I was right, then I **would try and explain to them more and more** (laugh), break it down **so that they could see my point**, but also based on their ideas ... their disagreements, I **would compare their disagreements to my ... to what I'd found and then if ... if I still felt I was right I would still push it**, I'm very like ... **if I believe I'm right, then I will make them know why I believe I'm right**, whereas if I feel like their response is a lot greater than mine, then **I would change my opinion because I feel like they've won**, like they have got the right answer, but if I don't then I will kind of try and get my point across and break it down into ...' (S14, F, 627)

Drawing from the comments above, students who responded with CR1 emphasised the case to search for evidence and proof to convince other when

there was disagreement in the group. In this case, these students were focusing on convincing the others in the group. However, there were other students responding in contrasting ways who wanted to be convinced instead. This leads to CR2 - be convinced - which is considered next.

6.1.3 Findings: CR2 – To enquire and be convinced before coming to a view

When students' views, ideas or perspectives were challenged during their group learning, some of them raised questions and asked for reasons or evidence for the presented alternative views. Students were persistent in their own views and considered that they were right. As a result, students wanted to be convinced with the presented alternative views, ideas or perspectives before they changed their mind and agreed on the final solution for the FFM assignment. The following variations in the ways they responded to the situations are considered below.

a. Ask for a convincing model

S15 mentioned questioning for a "convincing model" (S15, M, 547) and he needed this convincing model for him to agree on the final solution for the FFM assignment (S15, M, 509). Then, he might be able to "sort out" his own "differences". In his comment below, he stressed the point that he must be convinced in the process.

*'... I also let ... always let you to know that this is it and **this is my position and then convince me ... if you can convince me why** it's not and I'm a rational being as well and **I may be able to sort out my own differences**, but you must be able to know what I'm talking about to tell me.'* (S15, M, 572)

b. Ask for proof and evidence

S17 asked for proof before she could agree on the final solution for the FFM assignment. It can be observed in her comment, not only she would ask her members to show her their proof and evidence, she would demand proof and evidence for specific areas where they disagreed with her. In addition, she

would also search for more information in order to be sure (be convinced) that she was wrong in that situation.

'OK... and your ... you present the answer and somebody reject it, say that it's wrong, so in that situation what would you do?

I would try to prove to you that it's right and it depends on the number of disagreements, like in a group of four if three people say I'm wrong, then I should start thinking 'maybe I'm wrong', **but you have to show me a proof, you have to show me an evidence, you have to show me where I went wrong** and I have to still research on my own. **I can't just agree to whatever you say. I have to research on my own and be sure that I'm wrong.** '(S17, F, 85)

c. Ask for reasons and convincing comments

Some students, like student S21, simply asked for clear reasons to assess why other members were rejecting his ideas.

'Yes, so you ... you're OK with people rejecting your view? Do you ... yes? Go on ...

Oh I think they need to give, um, me clear reasons. If I think those reasons are understandable and those reasons are right I need to give up the whole idea, it doesn't matter, it's group work, we need to find the best one, not a personal assignment, our best ideas or experience.' (S21, M, 316)

He later explained that to reach agreement during the discussion, other members must give him 'convincing comments'

'... you agree, but what if you still don't think the answer is correct? Will you tell them or ...?

Yes, I will speak, but also they can give my ... their opinions or ideas, um, so everyone has limited knowledge, so maybe I am confident I'd say "On this one it's right, I was right about, other people said it was wrong", so that's why ... comments made, but **if it is convincing comments to me, OK, I just accept it ...'** (S21, M, 478)

S7 also asked other members for their reasons to prove that her ideas were wrong:

'I would want them to **give me their reasons of rejecting the idea really** because they could be right **if they can prove that I'm wrong, yes, ...'** (S7, F, 261)

d. Ask for a better argument

On the other hand, rather than asking for reasons, S20 requested a better argument to convince him that he was wrong.

'So let's say you put forward your view and it has been challenged, yes, so what ... how would you feel and what would you do?

Yes, I try to prove the point that maybe my point is correct, but **if they have a better argument and they try to convince me that I'm wrong then I'm wrong.**

I mean there is no reason to be defensive. There is nothing personal. We just ... we're trying to get to the best answer that we can.' (S20, M, 241)

Students responded in the ways described in CR1 and CR2 concentrating on either convincing others or to being convinced by oneself or others. By contrast, there were students who would like to understand one another when there were conflicting views during the interaction and discussion. These were CR3 which is considered in next section.

6.1.4 Findings: CR3 – To understand before coming to a view

Some students attempted to understand the presented alternative views during the interaction and discussion. For example, S1 shared that the group worked together and asked for explanations to understand one another. Unlike students associated with CR1 and CR2, S1 probed for explanations if she was not convinced by the alternative views.

'...We did it together and when an idea comes forward we like ... we look at it together, like "OK, **why do you think ...?**", if we feel we are not convinced we are like "**Why do you feel this should be like this? Can you try and explain to us more, so we could try and see what you are saying?**"' (S1, F, 318)

The following significant variations in the ways in which they responded in order to understand others' point of views before reaching agreement were identified, these are now considered below.

a. Listen and understand

Many students listened to members' alternative ideas. For example, S3 would listen and attempt to understand others' arguments and points of views. To establish mutual understanding before reaching agreement during the interaction and discussion, she would also try to explain her points to the members.

'OK, right. What would you do if this happened? Tell me.

Um, **first I listen to other person ... I listen his other argument first and try to understand this point.** Mm-hm. And, um, **say (explain to) them** our ... **my different parts and different part of my ideas**, but like I'm not really hard person, like I don't ... I can change my mind if ... it's not hard for me to change my ideas, so if his or her argument is more like logical from my idea, I can change my ideas, I'm not really, really stubborn.' (S3, F, 456)

Similarly, S11 would first explain what he thought, then listen to his members' views in order to understand one another before agreeing on the answer for the assignment.

'OK, if I put into a situation when, um, your view has been challenged and you are not happy with what they sort of explain ...Mmm.... what would you do in such a situation?

Explain what I think. Explain why I think what I think, um, and see what they'd say. See what they'd come ... **if they disagree with me I'd listen to why they disagree with me**, but in the most part in this case it never happened where we just kept arguing and kept arguing and we didn't agree on anything. **I think we all ... we understood what each was saying and then we all agreed on which was the right answer to be honest.'** (S11, M, 610)

b. Listen and reflect – try not to give reflex responses

Similarly, S4 listened to other members' views and he stressed that he would not try to 'hit back' by giving reflex response. In this sense, he tried to understand the presented alternative views in their discussion.

'How do you, um, sort of counter the, um, suggestions or views from that particular individual? Um, I would say I sort of ... well I just have to listen to them and think about what they say, but I normally ... I try not to make a ...

like a reflex response, I try not to just hit back with something. I have to try to actually think about it for a little while and try and formulate my own ideas. (S4, M, 252)

c. Seek more information

Some students sought explanations to understand one another during the interaction and discussion. To illustrate, S8 would research more to explain her ideas so that others would understand her point of view.

'Um, I do more research and I come up with things. For example, the factoring ... sorry, financing methods. We had no financing methods available, apart from the ... what was in the assignment. What was that again? The draft ... overdraft, so I said "No, we can find more", so I talked to other people who are professionals and I said "How can we finance a project in real life?", so they told me, I went on the internet, did some research and then provided it to my group: "This is how you can do to finance a project", so I would just do more research to say that what I'm saying is real ... is feasible, that's all.' (S8, F, 233)

S19 said he and other group members would look for basis of their views to provide an explanation and achieve mutual understanding.

'OK, in your general dealing with situations like this, do you think any other actions like, you know, "Now they say that my assumption is wrong", so is there any actions taken or you just "OK, that's it".

No, normally at the end of the day, they countered] suggestion **I had to really look for the basis just to make sure I'm making the right suggestion** because immediately they countered your suggestion you assert it and that means that what you have been doing is rubbish, **so I then want to make them realise**, you know, [] so that was one of the times **I made them realise and they too made me realise that this is the best way to do it.'** (S19, M, 437)

d. Review one's own and others' perspectives

Some students would review their own ideas first and take some time to reflect on the presented alternative view. S22 exemplified this case when she responded to differing views during the interaction and discussion.

'When ... assuming if you put forward some points or views, right, and someone is challenging you and debating you ...Mm-hm. ... How would you feel and what kind of actions would you take?

Um, you see some of these, um, discussions when somebody's challenging me on what I'm thinking, um, **I do tend sort of to try to sort of, um, check again with myself to see is this constructive?** Um, somebody can say maybe what you are doing is wrong because of A, B, C, D, and they could be saying it in the right way and **it's all up to me maybe to assess what they are saying and maybe I could be wrong, that's true, then I check what I'm doing as well.** (S22, F, 412)

When S22 was asked about how she assessed hers and others' views during the discussion, she shared that she would take some time to look at the views so that they could reach an agreement (compromise) after assessing and understanding one another's ideas.

How do you assess? In what ways?

Um, it's because somebody has challenged me during a discussion. I usually point out **"Can you give me time to go and look at this? To go and look at what you are saying ..."**, then maybe we can **reach a compromise.** (S22, F, 425)

S25 also mentioned compromising; unlike S22, she stressed that she would try to understand others' perspectives first (instead of hers), so that they could come to an agreement.

'Any incidents that when you put your views to the group and it was being rejected and confronted in the whole learning experience? Yes

Do you do any ... do you take any actions to look at your own views and others' view? Yes, I do. How do you do about it?

Like when I have my own opinion and you give me different opinion **I try to see where you are coming from and if to various extent it is positive like mine then I can buy your idea or look for a way that we can come to compromise and share good ideas to make it work.'** (S25, F, 231)

Unlike those students described above, S24 would go away and reflect on his views first, so that he could be sure of his own position. He pointed out how he reflected on his own views in details so that he could trace his own flaws and improve on them.

'So ... and if I ... if in a class ... **if we come with position I must ask why** because sometimes **I sort of go quiet, I talk to myself**, OK if you're to be at the other end, would you become this with this kind of position? So I think OK, yes, I would not, I would not, so then I say OK, **if I'm not able to convince myself from my room then I would not bother coming up with that kind of position**, but if I don't do that then I have to come up ... but I would do the fact that most times you actually ... you don't do the **thinking** to the ... **with the depth** at which you are supposed to do it, to the level at which you're supposed to do it and as such you come back, you know, you make an argument and see a flaw ... it won't be ... while you're saying it to yourself you see flaws in that argument, **well most times when I notice flaws in my argument I retract, I keep it ... I take it back for, you know, repackaging ...'** (S24, M, 350)

S24 explained a series of responses above, he described that he would have some time alone himself to reflect on the presented views and worked towards a perspective (position) he would take. It was interesting to observe that S24 would adapt his views and perspectives after a process of questioning and reflecting on his own 'position'. In this case, he would want to be convinced of his own position himself rather by others.

For S4, he pointed out that he would "criticise the criticism of my criticism" when his views were challenged. This showed that he took time to reflect on feedback. Earlier, S4 shared that he would listen to others' view without giving any reflex responses. Here, he explained that he first reviewed his ideas and explained them to other members. Then, he discussed their feedback (criticise the criticism of my criticism) and asked for the rationale for their viewpoints, particularly their thought processes. Lastly, he would then decide what position he would take. This was a good illustration of how he attempted to understand others during the interaction and discussion

'OK, yes, yes, if I'm being confronted, um, I would do two things. First of all I **would go through my ... in particular decision how I came to my answer**, so I would ... I would, um, I would like present to the group, tell them how I'd arrived at my decision and then I would talk about ... **criticise the criticism of my criticism** and I would look at it and say either whether I agree or disagree with it, um, **I would ask them for their rationale and their thought process ...** how they go to that decision and then ... and **then come to my own decision** whether we have to ... **whether I should change my view** or whether I think

that the other person ... or **whether I think that I am right** and that I therefore then have to try and explain to my group members why I think my view is correct.'(S4, M, 426)

In summary, this study identified three major variations in students' critical responses in the context of group learning. The critical responses explained how students acted when there were alternative views, ideas and perspective presented during the interaction and discussion. When group members challenged their views and ideas in this context of GL, the students responded by wanting to convince others (CR1), to be convinced (CR2) and to understand (CR3). Students also varied in the ways they responded within each critical response; these variations also showed how students negotiated with others and with themselves in order to reach an agreement during group learning.

These responses could refer to the constructive controversy theory, particularly processes such as constructive controversy, debate and concurrence seeking (see table 3.1, Chapter 3). It suggests that students have different ways to respond before they come to a conclusion.

Most importantly, drawing from the findings above, CR1 and CR2 particularly highlighted students' level of confidence in their own views, otherwise they would not, for example, debate (CR1) and ask for evidence (CR2) as they described their responses. This observation also implied students might hold 'right or wrong' ideas about the answers for FFM (for example, Perry's (1970) dualist epistemology). As a result, they must have been sure what was the 'right answer'. Such observations for CR1 and CR2 warrant further analysis and interpretation, hence they are considered next.

6.2 Critical responses and the views on the ‘correctness of answers’

Further interpretive analysis found one reason that was prevalent for students associating with CR1 and CR2, which were their views on the correctness of answers.

Students’ comments and responses suggested that they had certain ideas about ‘right’ answer(s). Students brought to FFM assignment ideas about their own or others’ views, ideas, suggestions and answers; this could be another stance in this learning context. Since students’ stances and perceptions are the core foci for the study, it warrants that the study considers the significant variations in the ways students described the ‘right answer’ in their comments. However, it must also be remembered, as discussed and explained in Chapter 4, that students used some terms rather loosely in the interviews, so the next section attempts to present the variations in the meaning of right/wrong or correct/incorrect for students.

6.2.1 Variations in students’ meanings of “the correctness of answers”

During the interaction and discussion in group learning, many students commented on the following in their interviews, particularly when their views were challenged during the interaction and discussion for FFM assignment:

- whether their answer were right /correct compared to others
- whether they got the correct answer
- giving the reasons and evidence that were right or correct

Following further analysis, there was a significant variation in the meaning of ‘right’ or ‘correct’ for these students, and they are considered as below.

a. Relative right answer

Many students used the term ‘right’ answer when they considered others’ perspectives. For example, S2 explained that, as long as there had been debate, he could accept suggested ideas. In this sense, he was not referring to an

absolute right answer, but rather a 'relative' right answer after debating and deliberating with others during GL.

'Can you easily accept (others' ideas)? Not easily, but after a debate **if anybody proves that they ... he or she ... my friend is right**, then I will accept it (S2, M, 146).

This 'relative' sense of what is correct is exemplified in S20's comment. S20 did not look for the absolute sense of correctness of the answer but a relative one. As long as someone had a *better answer* and convinced him that his point was wrong, he was happy to accept that they were trying to get the 'best answer'. Arguably, there was no best answer for the FFM assignment, what students meant was the best answer compared to all the answers they had deliberated.

'Yes, I try to prove the point that maybe my point is correct, but if they have a **better argument** and they try to **convince me that I'm wrong then I'm wrong**. I mean there is no reason to be defensive. There is nothing personal. We just ... **we're trying to get to the best answer that we can.**' (S20, M, 241)

On the other hand, S14 believed she was right and would explain her points by breaking them down so that other members would understand her eventually. She stressed that she would 'push' it if she believed she was right. However, after a comparison and consideration with others' views and ideas, she said she would change her mind because she felt other members' ideas were 'greater' (better) and had 'won' her over. In this sense, she was not looking for an absolute right answer, but a relative right answer.

'Um, to ... I'd try ... if I believed it was that ... like it was ... I was right, then I would try and explain to them more and more (laugh), break it down so that they could see my point, but also based on their ideas ... their disagreements, I would **compare their disagreements to my ... to what I'd found and then if ... if I still felt I was right I would still push it**, I'm very like ... **if I believe I'm right, then I will make them know why I believe I'm right, whereas if I feel like their response is a lot greater than mine, then I would change my opinion** because I feel like they've won, **like they have got the right answer**, but if I don't then I will kind of try and get my point across and break it down into ...' (S14, F, 627)

b. Absolute right answer

Some students suggested they had an 'absolute correct' answer back in their mind. For example, S17 was sure about her answer. She demanded proof and evidence to show what was wrong about her ideas. Furthermore, she stressed that she couldn't just agree without further research and confirmation.

'I would try to prove to you that it's right and it depends on the number of disagreements, like in a group of four if three people say I'm wrong, then I should start thinking 'maybe I'm wrong', **but you have to show me a proof**, you have to **show me an evidence**, you have to **show me where I went wrong** and I **have to still research on my own. I can't just agree to whatever you say. I have to research on my own and be sure that I'm wrong.** (S17, F, 90)

S23 held similar views. She would be angry if she was challenged in the group. S23 suggested an absolute view of the answer because she was affirmative about who was right.

No, I ... **when I angry I will ask them why** ... why you challenge me and then they say why, um, sometimes I will say "You are right", but sometimes I **will try to find out another, um, another thing to tell them I'm right**, so it's two kind. (S23, F, 415)

c. Optimal answer for group

On the other hand, S11 expressed that he looked for *optimum* answer in their discussion. In his meaning, the group members were trying to understand one another and agreed on the 'optimal' answer for the assignment.

'Explain what I think. Explain why I think what I think, um, and see what they'd say. See what they'd come ... if they disagree with me I'd listen to why they disagree with me, but in the most part in this case it never happened where we just kept arguing and kept arguing and we didn't agree on anything. **I think we all ... we understood what each was saying and then we all agreed on which was the right answer to be honest.**' (S11, M, 610)

Similarly, when S19 mentioned making the right suggestion, he meant that he was looking for an optimal suggestion. This was evident in his comment that he

did not hold an absolute view of his answer but was willing to achieve mutual understanding during the interaction and discussion.

'No, normally at the end of the day they countered suggestion I had to really look for the basis just to make sure I'm making the right suggestion because immediately they countered your suggestion you assert it and that means that what you have been doing is rubbish, so I then want to make them realise, you know, [] so that was one of the times I made them realise and they too made me realise that this is the best way to do it. (S19, M, 437)

It was noted that this 'optimal' view of the answers was different from the 'relative answers'. Students were looking for answer(s) that was/were the best for the group, rather than comparing whose was better.

Apart from critical responses, this study identified that students also held certain stances on the correctness of views and ideas. Drawing from their comments, it appeared that the significant variations in the meaning of the correctness of views and ideas included (1) absolute view; (2) relative view and (3) optimal view. Again, these variations of meaning in the 'correctness of answers' could associate with the students' stances on conflict identified in Chapter 5. The 'absolute' view may align with closed-mindedness, and the 'optimal' view with avoidance stance. Though it was highlighted that students might use terms loosely in the interviews, nonetheless such observations provide insights for the critical responses, particularly CR1 and CR2. Such insights and relationships are explored in Chapter 7.

6.3 Summary of Chapter 6

As Chapter 5 solely focuses on the *Presage* within the analytical framework, this chapter centres its attention on the *Product* after students underwent the *Process* of Promotive Interaction and constructive controversy. The chapter first presented and reported three critical responses, together the significant variations in the ways students responded, when group members challenged their views, ideas and perspectives during the interaction and discussion. Drawing from their comments, the study also identified the stances students took on the correctness of views and ideas, particularly the answer for the FFM assignment. Gathering all the findings in this chapter, they are presented in figure 6.1 below.

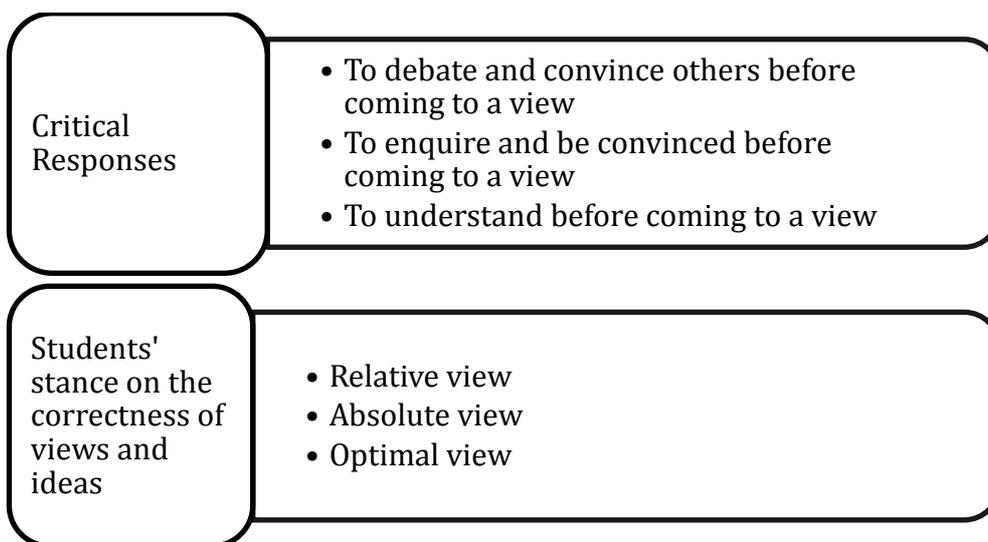


Figure 6.1: Summary of findings of Chapter 6

Critical responses may be associated with students' stances on their willingness to engage in conflict. Are students associated with CR1 and CR2 closed-minded? There was no identification of such a stance for students in this study. This observation warrants for further analysis and will be examined in the second stage of data analysis with the formulation of matrices as explained in Chapter 4. Chapter 7 presents the matrices that incorporate all findings considered in Chapters 5 and 6, with the aim to explore the potential relationships among them, as stipulated in the analytical framework of the study.