SOCIAL SCIENCES & HUMANITIES

PERTANIKA JOURNALS

The Use of Reflective Journal in a Postgraduate Research Methodology Course: Student Experiences

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ABSTRACT

This paper examines the research skill development of an intact group of postgraduate (Master of Arts) students in a research methodology course. Data were collected from the students' weekly introspective reflective journals over one semester and a semi-structured interview at the end of the course. Results from the students' reflections revealed the initial high anxiety among novice researchers who had to juggle between learning new concepts and applying the knowledge in practice. Those who looked at the rewards instead of the challenges found their learning processes more meaningful although they also struggled in completing tasks and writing assignments. The students' research skill development culminated in a sense of achievement and satisfaction. The findings from the study contribute to the awareness of the difficulties, the strategies used and the worthwhile learning experiences of novice researchers in acquiring and developing research skills. Suggestions for pedagogy are identified for the use of reflections in the classroom.

Keywords: Reflective journal, reflection, research methodology, metacognitive strategies, graduates

INTRODUCTION

Reflection is a deliberate cognitive activity where learners connect thought, feelings, and experiences related to the learning activity in which they are involved in.

(Andrusyszyn & Davie, 1997, p. 2)

One of the ways to increase the value of the learning process and experience is to ask students to keep records through

reflective journals (Ong, 2004). Schön (1987) proposes that reflection bridges the gap between theory and practice which in turn changes practice. He distinguishes two types of reflections: reflection-in-action and reflection-on-action. The former is sometimes described as 'thinking on our feet'. It involves monitoring and modifying actions in the situation that is unfolding during the learning process. The act of reflecting-on-action refers to evaluating our activities and practice to explain why we acted the way we did.

The benefits of using reflective journal are numerous (Bourner, 2003; Levett-Jones, 2007; McGuiness & Brien, 2007; Ong, 2004). First, reflective journal fosters an active and independent approach for students to take ownership of their own learning process, to make sense of subject matter which is novel to them and to take note of the processes they are engaged in (Ong, 2004). Second, reflection increases the use of higher order thinking skills because students have to develop a deep, personal understanding and awareness of themselves as researchers (McGuiness & Brien, 2007). Third, it helps the teacher as well as the students to monitor their understanding and ability to handle new concepts or knowledge (Ong, 2004). In addition, the teacher can track the changes in the cognitive and metacognitive abilities of their students. Furthermore, reflection can heighten the students' awareness of strategies used to regulate their cognitive processes and to understand their own learning styles and approach (McGuiness

& Brien, 2007). Finally, reflection can also be used as an assessment tool for teachers (Bourner, 2003; McGuiness & Brien, 2007).

Students' reflective journals, thus, provide valuable qualitative data, which may not be available from other sources (Wagner, 1999). Although research has been conducted on the role of reflection on student's writing (Xie *et al.*, 2008; Yang, 2010) or learning experience (Kaur, 2003; McGuiness & Brien, 2007; Ong, 2004), study using reflective journals in obtaining students' learning experiences in research skill development is lacking. Hence, this study is conducted to add to the knowledge of previous research about students' learning processes, particularly in acquiring research skills.

This study is based on constructivist theory. From the constructivist point of view, learners take control over their learning when they move from other-regulation to self-regulation (Vygotsky, 1978). In other words, the learners become more independent learners and start regulating their own learning processes. In order to achieve this successfully, students require cognitive and metacognitive knowledge and strategies (Perfect & Schwartz, 2002). Cognitive strategies refer to the strategies that writers use to implement the actual writing actions. Metacognitive strategies are those that writers use to control the writing process consciously. Metacognitive strategies consist of three components: planning, monitoring and evaluating. By using these skills to guide, direct or regulate their own thought process, the learners can

take control over the learning process and select which method of learning works best (Schraw & Dennison, 1994; Wenden, 1998). Reflection provides the avenue for learners to think about what they need or want to accomplish and how they go about accomplishing it. By monitoring their own learning processes, students are able to recognise which strategies they are using and whether what they are doing is effective to meet their learning goals.

OBJECTIVE OF THE STUDY

The general objective of the study is to obtain insights into the learning experiences of postgraduates when they learn about research. Specifically, the study seeks to gather insights into the novice researchers' trajectory and learning processes through reflective journal entries. In addition, the study aims to tap the students' awareness of their cognitive and metacognitive development. Findings from the study should be able to help research course instructors to incorporate mediation and supportive measures in the instruction, and to improve on the teaching and learning processes.

METHODOLOGY

This study employed a qualitative research approach whereby qualitative data collected through students' reflective journals were examined by content analysis. The data collection spanned over one semester (14 weeks).

Participants

The participants were from an intact class of adult learners who were enrolled in a Master degree Research Methods in English Studies course at a public university. Table 1 provides a brief profile of the participants. The actual names of the students have been changed and pseudonyms are used.

There were initially 20 students in the intact class, but one student dropped out in week seven. A majority of the students were Malaysians with the exception of three international students from Iran, Syria and Palestine. Out of the 19 students, two were in their first semester, 11 were in their second semester, and six were in their third semester of their Master degree programme.

The majority of the students opted to do a coursework Master degree, which requires them to submit a research project paper as a prerequisite for graduation, while Jenny and Wendy chose to pursue a Master programme with thesis. As shown in Table 1, all the Malaysian students had taken a research methodology course or a similar course at the undergraduate level whereas the international students had not. Hence, the Malaysian students would have some knowledge about research.

Research Instrument

On the first day of the research methodology course, the nature and the purpose of the study was clearly explained to the students by the instructor cum researcher. The students were asked to participate, on a voluntary basis, in writing weekly reflective journal

TABLE 1
Participants' profile

Name	Year of study	Country	Research knowledge
Jenny	1st sem	Malaysia	Yes
Najwa	1st sem	Palestine	No
Ali	2rd sem	Syria	No
Atikah	2nd sem	Malaysia	Yes
Ayu	2nd sem	Malaysia	Yes
Farah	2nd sem	Malaysia	Yes
Munah	2nd sem	Malaysia	Yes
Shaida	2nd sem	Malaysia	Yes
Shamila	2rd sem	Malaysia	Yes
Sheila	2rd sem	Malaysia	Yes
Yen	2nd sem	Malaysia	Yes
Wani	2nd sem	Malaysia	Yes
Wati	2nd sem	Malaysia	Yes
Donya	3rd sem	Iran	No
Annie	3rd sem	Malaysia	Yes
Hajar	3rd sem	Malaysia	Yes
Nur	3rd sem	Malaysia	Yes
Sharon	3rd sem	Malaysia	Yes
Wendy	3rd sem	Malaysia	Yes

entries. They were advised to consciously engage in journaling to keep track of their understanding of the subject matter and the development of their research skills. The two main purposes of the reflective journals are: 1) to keep a record of their weekly learning and 2) to reflect honestly about problems or challenges faced, steps and strategies employed to carry out tasks and assignments, as well as their personal concerns and feelings. The students were assured that their participation or non-participation would not in any way affect their relationship with the lecturer. All the students participated in the study.

As an incentive, 10 per cent of the overall course assessment was allocated for the reflective journals. Instruction for reflection was given every week based on the topics covered in class or activity for that particular week to help students focus on what to write. The students then submitted the reflection the following week and this pattern was followed until the end of the course. The students wrote 13 reflective entries throughout the course. There were two or three students who skipped writing some entries.

The students were also interviewed at the end of the course to elicit information about their awareness of their learning experiences, the strategies they used, what they gained from writing the reflections, and how these awareness were translated

into action when they wrote the research proposal. The semi-structured interview lasted about 20 minutes per individual. The responses from the interview were used to triangulate the reflective journal entries.

The weekly reflective journals and the interviews were then analysed qualitatively to uncover categories that emerged from the content of the individual's reflections. The major categories were then presented in themes and discussed collectively. The reflective journals and interview responses were quoted verbatim in the discussion.

Writing Tasks

The students were assigned a few tasks and three assignments throughout the course. Some of the tasks were done individually while the assignments were done in pairs or in groups of three. The majority of the students worked in pairs except for two groups who worked in trios because of convenience in arranging meetings as they were working in the same place. There were three students who had to do the assignments individually because they could not find a partner to do the same topic. One of them was partnering the student who dropped out of the course halfway and she was left to work on her own.

During the initial few weeks, the students were asked to search for a research topic which was of interest to them. After narrowing down on a topic, they wrote a one-page problem statement. The two tasks were done individually. The students were encouraged to continue the task of searching for relevant literature as much as possible.

The three assignments were: a) critical review of qualitative articles, b) critical review of quantitative articles, and c) a research proposal. For the first assignment on critical review of qualitative articles, each student was asked to select two journal articles relevant to his/ her topic. Initially the students critiqued the articles on their own and later they met up with their group member(s) to synthesise their critiques. The assignment was submitted in week 8. The same process was followed when they did the second critical review of quantitative articles in week 12. The class activities and assignments culminated in the preparation of a research proposal in week 14.

RESULTS AND DISCUSSION

Results from the participants' reflective journal entries were categorised and presented in major themes in line with the chronological progression of the course over the semester. Some of the themes, however, may surface in a recursive manner at various stages as learning does not occur in a linear process. The entries were presented verbatim.

Apprehension and Challenges

In the first few weeks of the course, the students were asked to reflect on their experiences of identifying a research topic, doing literature search and writing a one-page statement of problem. The reflections below captured the anxiety and the challenges that some of them went through in completing the tasks.

Like drowning in the deep sea without knowing how to swim. This was how I felt in my first days in Research Methods course. I found myself amid too many tasks to do which made me feel confused not knowing where to start.

(Najwa)

Nailing down a research topic is not an easy matter at all. I am dying thousand times everyday to find one but in vain. It took me 8 hours to write a one-page problem statement assignment.

(Ali)

Najwa and Ali, who are both international students, used metaphors to draw an analogy of their mental struggle. The metaphors "like drowning in the deep sea", "dying a thousand times", depicted very strong emotion. Najwa, who joined the course two weeks after it commenced, and Ali, who did not have knowledge about research, chose the metaphors to illustrate their deep sense of anxiety and anguish in fulfilling the tasks and doing research for the first time.

Even students who had taken research methods before also found the tasks very challenging as they struggled to overcome the initial hurdle of finding a topic and writing the statement of problem. The students laboured over the tasks in states of confusion, despair, helplessness, and directionless as described in the reflections below.

No clear idea of what to work on. My head is a complete mess.

(Nur)

I have sit in the library for hours since collecting good material is not an easy task. Now I can start preparing the material and write statement of problem. In front of me I can see many thorns and holes.

(Atikah)

I was into the internet almost 15 hours per day, multitasking, browsing articles after articles but ended up in failure… I was drowning deeper and deeper, not getting help from anyone.

(Shamila)

Guess a person can misplace the screws on their skulls thinking about a topic. I didn't have nightmares but I was the nightmare for everyone else. I bugged every single person I speak to. I spent the entire day, skip lunch to browse for two articles.

(Sheila)

All the students tried to cope with the demands of extensive reading, choosing relevant literature and a topic of interest in their own capacity regardless of the cultural variations between international and local students. Sheila consulted other people for ideas, but ultimately she had to do the tasks on her own. The apprehensive feelings that resonated through the reflections were

legitimate because the students were still at the early stage of learning how to conduct a proper research which includes proper planning, reviewing literature, rigorous process of collecting data, analysing data, reporting and evaluating the research (Creswell, 2008).

Excitement

Despite the overwhelming anxiety and pressure that some students felt in carrying out the initial tasks, there were others who were excited about research. Below are the reflections from the motivated students.

> *I should have a topic soon so that I can plan my whole semester ahead. A topic will navigate me in the right direction and hopefully keep me sane. Finally got a topic after much searching in the dark. The light is finally showing itself.*
>
> (Sharon)

> *Doing a research is quite interesting because of the benefits we can get to explore something, gain new findings in a certain topic and manage ourselves to be discipline in order to finish the research.*
>
> (Wani)

Sharon and Wani viewed the tasks in a positive manner although it was also tough going for them. Sharon knew that the sooner she narrowed down on a topic, the easier it would be to progress. In the interview, she mentioned that she conscientiously searched for a topic until she found one in order to have a head start. Meanwhile, Wani considered the benefits of doing research in gaining new knowledge and being trained to be disciplined. Some students also acknowledged the difficulty of researching but they purposed in their mind and had the strong determination to understand the concept of research, to put effort in the study, to conduct a useful research and to be resilient. This is evident in Annie's, Farah's, Yen's, and Wendy's reflections.

> *Experiment knowledge on research and rectify my misunderstanding on various concepts of carrying a research. There are rocks along the way, but it is our choice whether to build a bridge or a wall. I have chosen to build a bridge and I will.*
>
> (Annie)

> *Research need hard work, the struggle and people who involved in research should be consistent with the study. Therefore, no matter what happened, we have to put all our efforts in the study and the piece of work should be appreciated.*
>
> (Farah)

> *The idea of research sounds scary after the first class. Is it really hard? However scary it may sound, I've purpose in my heart that I want to do a research that benefits the society.*
>
> (Yen)

*Excited about learning new things…
the word resilient and resolute are
key words for research.*

(Wendy)

By adopting a positive attitude and
eagerness to gain new knowledge, these
students found learning about research and
preparing to write a research proposal less
daunting. They chose to concentrate on the
reward instead of the hardship of doing
research. This positive approach remained
with these motivated students throughout
the semester as evident in their subsequent
reflections and interview responses.

Learning to Critique Literature

The critical reviews of qualitative and
quantitative articles were firstly done
individually and later the students combined
and synthesised their reviews with their
partner or group members. They had
approximately four weeks to do each review.
The students found the first critical review
extremely difficult to do since it was the first
time for them to critique journal articles.
They were asked to reflect on their personal
experience of writing the critique to find out
what were the challenges faced, steps taken
or things that they learned.

*Initially I did not have any opinions
about the articles. But as I read
more and made comparisons, I
began to have ideas and comments
about the articles. Summarising the
journals in a table was very helpful.*

(Yen)

*I do not know how to critique,
since I don't know what are the
design types and methods. Thus, I
have to spend more time on further
reading. I started with reading
about methods. Then I read the
presentation notes of my colleagues
about research methods. I searched
online and have found a great essay
explains other study designs…
google for "how to criticize a
qualitative research".*

(Najwa)

*I learnt a few valuable rules on
critical analysis. 1) to identify
the focus of the assignment. 2)
to identify your point of view. 3)
to consider how you'll persuade
other people of your point of view.
4) to find the proof. 5) to engage
in debate. 6) to structure your
argument. The most important
thing that I learnt was on argument.
Argument here doesn't mean
disagreement or unpleasantness. It
simply means presenting a strong
case to support a point of view.*

(Shamila)

The first challenge for the students to
do a critical review was to fully understand
what the journal articles were about. The
next challenge was to comprehend the
research design and methods used before
the students could even start to critique.
The most difficult challenge was the critique

itself. All the students mentioned in the interview that they had to read the articles two or three times to fully grasp the content. As seen in the reflection, Yen had taken steps to help her carry out the task. After she had read each article, she summarised and categorised the objectives, methods, key findings, and conclusion in a table format. This technique was taught in class to help the students manage their readings and to make comparisons easier. The majority of the students also used this technique to keep record of their readings. Najwa, who did not have a partner to work with, devoted time to find out more about different research methods and how to critique from the class presentations and online sources. Shamila discovered a few rules which helped her in the critical review task and in understanding the real purpose of presenting an argument.

Other students recorded the steps which they consciously took to complete the task. Among the cognitive strategies and the steps they took were making notes and paraphrasing ideas, incorporating salient details, and synthesising. Ali knew that his writing had to be original and he had to evaluate the strengths and weaknesses of the articles equally. Annie, on the other hand, focused on finding out information about 'need to know now' and 'must investigate further' from the articles to help her critique. She also placed emphasis on synthesising her work. Wati realised that she could not be overly critical when doing the critique because she believed that the authors have their rationale in choosing

a particular methodology. She had to be neutral and avoid biasness. What she learned from the critique was how to overcome the weaknesses in her own study. The task also provided the practice to hone her research skill. Below are the students' reflections.

I was making notes on the margins of the papers and highlighting the points that really needs to be evaluated. I started paraphrasing and discussing the journal in my own way. I did not literally jot down any line from the journal, but my writing was original. After I gave a meaningful brief summary, I evaluated the journals to give the strengths and weaknesses.

(Ali)

I ensured that my critics cover the "need to know now" versus the "must investigate further" aspect of the study. I provided the details and allow the reader to know who, what, where, when, why, and how-about the study. I always relate one study to another, and not just repeat the same things again and again.

(Annie)

I try to be neutral for certain situations, for example when it comes to methodology and data collections parts. On my mind, I just I think it is the writer's freedom to create their own research and she/

he knows what is the best for their research. I realize that from this task, actually I can overcome their weaknesses on my current study. As I write my critical reviews, I also imagine that I actually in process of doing these research.

(Wati)

Working with Peers

The majority of the students liked the opportunity of working with a partner or in a group because group discussion allowed them to see things in wider perspectives and to justify their viewpoints. In addition, group members also provided valuable feedback, clarification and emotional support for each other. Working in pairs or in a group also helped the students to identify the weaknesses in the critique and to improve their own writing.

The debate com dialogues among us brought about a free flow of meaning about the research papers. We had the opportunity to know the different angles that we can view the code-switching phenomena.

(Annie)

I gained loads of information by discussing with my group members. The more we argue, the more ideas came into my mind. We are not passively accepting everything we read or hear, but questioning, evaluating, making judgments and finding connections. It means being

open to other points of view and not being blinded by our own biases.

(Shamila)

Doing critical review with a partner really gives me an extraordinary view as we could discuss, argue, presenting the facts and critics with each other's ideas… we evaluate the articles together, argued in certain parts, asked a lot of 'why' questions. It taught me for not being too rigid and sees things in a straight way because actually other person does not view things as the same as I do.

(Wati)

We can discuss and give feedback to each other from the various perspectives. For examples, if I don't understand about the journal articles, I will ask my partner to clarify my confusion and vice versa. I can kindly ask my partner to review my writing and in the same time I can also help her to review her task. We can help each other especially in improving our writing and content of the journal review.

(Munah)

Having a partner allow me to express what I do not know and it gives me some emotional approval.

(Shaida)

Critically reading the work of another writer enables me myself to become more able to identify, diagnose, and solve some of our writing issues.

(Farah)

The reflections show that the students gained more when working with peers. Almost all who had the opportunity to work with a partner commented in the interview that the experience was beneficial for them, except for Wendy who felt otherwise. In the interview, she voiced that it would be better to do a critical review alone because at the graduate level, students should be able to work independently to develop autonomous learning. Moreover, she felt that when working alone, one would be more careful to attend to details in one's writing. Her reflection also shows her preference for individual work.

I don't think working together is very fruitful because we were just trying to get the assignment done. I think individual critical review will be better because when everyone is doing in groups, we just tend to write ourselves and combine without actually looking at the coherence. Everyone is busy and don't have time to actually sit down to discuss things together.

Cognitive and Metacognitive Development

Cognitive and metacognitive strategies are closely related and dependent upon each other. The former is used to help a person achieve a particular goal while the latter is used to ensure that the goal has been attained. Sometimes it is difficult to make a clear distinction about both strategies because one follows the other. Metacognitive strategy always follows a cognitive goal. Some cognitive strategies have been discussed in the earlier section. Below are some examples of the metacognitive strategies used by the students in planning, monitoring, and evaluating their actions.

At the initial stage, Nur did not have a clear goal or direction on what to do. As Nur progressed, she started to plan her actions. She realised that to do the critical review, she had to come up with an outline and to think through her framework. This provided the focus on what to say or how to justify her arguments convincingly to the readers. She seemed to be in more control. When Najwa monitored what she had been doing so far, she discovered that in doing the critique, she detected common mistakes which researchers made. She started to avoid plagiarism, include sufficient literature review, and use correct research instruments and analysis in the writing of her research proposal. The followings are Nur's and Najwa's reflections.

I realized that now I am more critical and analytical when deciding on something that are very important such as ability to analyze and critique the journal articles and argue on it. It is essential for me to make an outline and think through the framework before I start writing. I need to think what I

would say, why I say that and why I believe it is true and how to make the argument clear.

(Nur)

The process of criticising is a useful means that enables the researcher to know the most common mistakes other researchers often fall in. I have been more able to avoid some common mistakes like plagiarism, inconsistency, invalidity, unreliability and lack of literature review.

(Najwa)

Wati felt that her awareness of herself as a researcher has deepened. During the interview response, she mentioned that reflection was one way to develop higher order thinking skill because students could learn from experience to solve their problem. By thinking about what she was doing and why she was doing it, had made her learning process more meaningful. This concurred with what she wrote in her reflection.

Metacognition means the awareness and understanding of myself as a thinker. When I hit blind alley, I stop, analyse and reflect… I realised that I have gained an awareness of alternatives to my own processes. I turned out to be a person who has learned to learn.

The evaluation component of metacognitive strategy was also evident. Ayu realised that she had to critically

scrutinise and evaluate journal articles and read additional journals to justify her critique. Hajar found that the critical review task had developed her critical and analytical thinking. When she did a self-assessment, she was aware that she could detect weaknesses and strengths in people's writing and provide feedback more confidently. She also felt that her academic writing had improved. As seen in Ayu's and Hajar's reflections:

I have to evaluate these materials critically - study the details, how far the materials are appropriate, how far the evidence used really proves the points that the writer claims. Extra readings become useful as I can use it to support my arguments when doing the review.

(Ayu)

I forced my brain to think critically and analytically to finish the assignment. Now I feel confident and did not lost in space if I have to encounter another critical review. Furthermore, when someone asked me to check his/her final year project or journal, I can easily spot the lacks, strengths in their work and I can give them opinion of how they can improve their work. My academic writing skill has improved because of those assignments, in helping me gain those hard and difficult yet precious experiences.

(Hajar)

Reflections of Research Trajectory

During week 13, the students were asked to express their views about writing reflections. Nur's reflective journal entry showed the progression in her research trajectory. From a person who felt overwhelmed about research in the beginning, she had become someone who is more knowledgeable about research. Annie, who has always been positive, felt that the course encourages personal responsibility in researching and developing academic writing. The reflection task has also helped Ayu to assess her understanding of the subject matter and her cognitive processes. Munah found that the weekly reflective writing developed her fluency. Below are excerpts from the students' reflections.

> *Research logs had helped a lot on writing my research proposal step by step. I was able to reflect on what I have learnt and what I was trying to achieve. The exercise also helped me document problems encountered and how would I overcome them. Reflecting my own learning experiences had helped me to become a more active and aware writer.*
>
> (Nur)

> *I believe that critical and creative thinking skills are incorporated in the learning outcomes to enable us solve simple to complex problems, make decisions, and express ourselves creatively in formal and academic language. The nature of this course which seemed to be of self-learning has integrated the aim of enabling us to take responsibility for our own learning.*
>
> (Annie)

> *The reflection tasks help me know if I understood the lesson or if I should do more on my own or seek additional instruction. By writing the reflection, I can assess my knowledge. I would review what I did or practice more of the same to better understand the subject. I also become aware of my thinking process as I write the task.*
>
> (Ayu)

> *I have become a more advanced thinker. Last time I have to think a lot before I write my logs. It is very short. But now once I get my pen down, I start to write non-stop and it is much longer. Even my housemate says my writing has improved.*
>
> (Munah)

CONCLUSION

One of the main goals of the course is to develop autonomous learning where ample opportunities were given to students to discover and construct knowledge on their own. The reflections provided valuable insights into the students' struggles, action plans, and achievements which are useful for a better understanding of how they

independently coped with the pressure, pinpointed strategies that worked for them, and displayed new found awareness.

There are a few suggestions how teachers or practitioners could use reflective journal effectively to enhance the teaching and learning process. Firstly, reflective journaling must be purposeful and focused. Students have to be guided on what to reflect to maintain interest; otherwise, they would find it a chore. The topic provided should be in line with what the students did for the week to enable them to reflect and to assess whether they have learned or have not fully learned new concepts.

Second, based on the weekly entries, teachers should act on the concerns raised by the students as some may be too shy to voice the issues in class. For instance, if there are problems that arise during group work or a particular task is beyond the students' capability, negotiation and solutions can be worked out. By addressing issues early, the course could progress smoothly.

Third, teachers can use students' reflective entries as a gauge to strike a balance between fostering learner autonomy and providing assistance to weaker students. Teachers can allow time for students to work out problem-solution through various strategies before giving help at the appropriate time. This increases students' sense of responsibility and independence as they gain control of their own learning processes.

Fourth, teachers can inform their students that writing reflection enhances the use of metacognitive strategies when students engage in purposeful thinking of how to reach goals. They will have to monitor and evaluate their performance constantly and plan possible ways to attain the goals. Reflection also pushes students to assess what was done well or what could be improved and to adjust their action strategically. These problem-solving activities can broaden students' critical thinking.

Finally, teachers can remind their students that consistent writing of reflections can improve writing skills. It reduces writer's block and increases fluency in writing. Students can also read one another's reflective entries to find out what their peers experienced. It can act as mutual support to know that others are facing the same challenges or they can emulate the strategies used by others.

In closing, reflection which is regarded as a mental route into one's internal processes can be used to inform and to improve practices in the classroom. Further research can be carried out in different disciplines to add to the pool of knowledge concerning students' learning trajectory in various fields in order to come up with the best practices.

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