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102. **Design and Evaluation of Intensive Workshop for Making Science Shows**

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The authors work at CoSTEP (Communication in Science and Technology Education and Research Programu), Hokkaido University, which is the educational organisation that nurtures science communicators. CoSTEP provides three different yearly learning courses, which are Comprehensive, Selective A, and Selective B. The two “Selective courses” are composed of 27 e-learning lectures and intensive workshops. Selective Course A weighs on designing face-to-face communication experience. Selective Course B weighs on scientific writing.

In this paper, we focus on the workshop of Selective Course A, which was a three-day intensive workshop where participants made science show programmes, held from 26th to 28th of August 2011. There were 20 participants, which were divided into four groups who produced four science show programmes of 20 minutes each.

The authors designed the workshop based on the concept of the “Cycle between Expression, Sharing and Reflection”. Short lectures about general guidance, planning, programme design, writing a press release, designing a flyer, making a manual, and facilitation were given (each of which was in approximately 20 minutes or less). We also made participants do mutual interviews to train in facilitation skills and to promote interaction among them. The other time was used for group works where participants discussed the plan of the programme, prepared and rehearsed for it.

Titles of the science shows are as follows:

1. The Wonderful Feature of Zosteraceae, the Cradle in the Sea
2. Use of Salmon Soft Roe for Cleaning Environment
3. Girls, Be Ambitious! Welcome to the World of Science and Technology
4. Problems and Future of Hokkaido

We introduced several tools to realise the “Cycle between Expression, Sharing and Reflection”

1) Each participant was made decide his/her own learning goal at the beginning. The questions were as follows:

1. What do you especially want to learn in this workshop? Write down your learning goal.
2. How do you think and behave in the workshop to achieve the goal?
3. What kind of role do you try to take during group works?
4. Which part of planning, group works, event preparation, and event operation do you dislike or feel difficult to deal with?
5. Which part of planning, group works, event preparation, and event operation do you like or feel easy to deal with?
6. What do you find or think about, reflecting your study at CoSTEP up to now?
7. What do you especially want to study at CoSTEP from now on?
8. Your promotion comments, etc.

2) Exhibit all intermediate outputs (for example, learning goal worksheets or notes of mutual interviews)
3) Participants reflected on their own activities at the end of each day, wrote down their findings, achievements, and anything to be improved on papers, and they exhibited the papers on the wall to share with each other.
4) Real-time documentation: Our staff took photos of participants’ various activities during the workshop and put it on the wall on a timeline with short comments.

5) They evaluated their achievements by themselves at the end of the workshop. The questions were as follows:
   1. If you changed your learning goal, describe it.
   2. How well have you achieved you learning goal? Evaluate by yourself.
   3. What did you realise through the workshop?
   4. What is the next learning goal you want to have after reflecting the workshop?

We used online tools for participants to share their learning goals and presentation files for their self introduction, let them put comments on others’ presentation, and let them share various outcomes of the workshop.

After the workshop finished, participants answered the questionnaire to evaluate the whole workshop, and necessity and satisfaction level of each of the learning elements. Results were as follows (n=15):

1) general satisfaction: satisfied = 80% / relatively satisfied = 20%
2) length of the workshop: appropriate = 80% / relatively too short = 20%
3) management of the workshop: good = 67% / relatively good = 33%
4) learning goal work sheet:
   • good = 47%
     • Writing the goal made me realise it clearer and tackle it more consciously (2 persons)
     • It was useful to reconfirm my purpose and to evaluate my achievement by myself
- relatively good = 33%
  - It was useful because I’m not good at setting my goals
  - It enabled me to realise my goal during the workshop and achievement after it had ended
- relatively bad = 20%
  - I don’t understand what to write
  - I wish I carried the work sheet during the workshop in order to be more conscious about it

5) Real-time documentation: good = 73% / relatively good = 27%

6) Pre-workshop tasks: good = 93% / relatively good = 7%

7) Use of internet during pre and post workshop period: good = 54% / relatively good = 33% / relatively bad = 13%

8) daily reflection
  - good = 60%
    - It helped me reflect each day (3 persons)
    - I was able to share other members’ opinions (5 persons)
    - It encouraged me before I start working
  - relatively good = 33%
  - relatively bad = 7%
    - I couldn’t make use of it enough

The results were good in general. However, the programme seemed to have been slightly too intensive for participants to thoroughly experience the “Cycle”.