International Journal of Enhanced Research in Educational Development (IJERED), ISSN: 2320-8708
Vol. 3, Issue 2, March-April, 2015, pp: (33-40), Impact Factor: 1.267, Available online at: www.erpublications.com

Measuring Activities and Result ofthe Scheme for Academic Mobility and Exchange Program

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Abstract: Human resources empowerment is an important and essential program to increase the quality of lecturers in education services. One of the programs offered is called the Scheme for Academic Mobility and Exchange. In this program, lecturers propose activities conducted in a modern university, which consists of targets and results for the program conducted in a foreign university. Analysis and evaluation of the program has been conducted to perceive the relationship between targets and implementation. The results are presented on the tables and figures. At the end of this paper, an overall performance of the program is presented.

Keywords: Human Resources Empowerment, Academic Mobility, Exchange Program, University Performance.

Introduction

The Scheme for Academic Mobility and Exchange (SAME) is an enhancement academic program created by Indonesia ministry of higher education to promote the development of high quality lecturers in Indonesia's higher education system and to better form lasting partnerships between partner universities and Indonesian higher education institutions. The program is technically maintained and run by the Directorate General ofHigher Education Ministry of Education and Culture [1].

The SAME program is designed to encourage foreign exchange for permanent lecturers, who have a doctorate degree, of state and private universities in Indonesia. This program aims to give lecturers the chance to travel abroad, to feel the academic atmosphere in the partner university and to discuss collaboration in education and research with the partner university. Those activities will become a useful experience for improving the quality of the institution.

The SAME program may last maximum three months and usually conducted between September to November. It covers the cost of international flights, health insurance, and a living stipend for up to 3 months. The program prioritizes universities that have Memorandums of Understanding (MoU) with the university targeted for exchange. In this paper, the program activities have been conducted at University of Skövde Sweden during September to October 2013.

Designed of Tasks, Outputs and Outcomes (Targets)

The tasks, outputs and outcomes of the SAME program has been described completely in the proposal [2]. All are summarized as follows:

Tasks

1. to discuss research topics in the area of human action recognition and computer and robot models of action recognition,
2. to develop collaborative research between the Universitas Padjadjaran and the Interaction Lab, Informatics Research Centre, University of Skövde,
3. to discuss possibilities of joint publications on action recognition,
4. to discuss possibilities for academic exchange and mobility of lecturers and graduate students of the Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Indonesia, and the University of Skövde,
5. to undertake a comparative study on undergraduate and graduate programs at the University of Skövde and the University of Padjadjaran.

Outputs

1. Draft of research proposal

2. Draft of paper and/or book chapter
3. Draft of teaching and learning material
4. Activity report/overview report, experiences, including curriculum design and exchange and mobility scheme

Outcomes

1. Research quality improvement
2. Publication quality improvement
3. Teaching/learning quality improvement
4. Cooperation quality improvement

Program Implementation

In this section, all activities that have been performed in the University of Skövde will be listed and all outputs as the result of the activities will be presented. The outcomes will be given as the subjective opinion of the author. It is noted that all activities are grouped in weekly interval. Detail daily activities can be viewed in my blogs or in full report.

Activities

1. 09 Sep-13 Sep
   1.1. Guided tour of University of Skövde by Anette Andersson, checking room and facilities at Informatics Research Center (Portalen)
   1.2. Meeting with Dr. Niklas Torstensson and Dr. Tarja Suzi at Informatics Research Center (IRC).
   1.3. Meeting with Prof. Tom Ziemke, introduced to several researcher at IRC.
2. 16 Sep-20 Sep
   2.1. Attending doctoral defense of Sanja Jurcevic.
   2.2. Discussion with Dr. Björn Olsson.
   2.3. Discussion via email with Prof. Tom Ziemke about sitting-in a course.
   2.4. Sitting-in on Prof. David Vernon course: Scientific Theory of Informatics.
   2.5. Discussing with Gauss Lee about robot NAO.
3. 23 Sep-27 Sep
   3.1. Explanation of internet, printing and communication facilities including information that can be extracted from HIS web (www.his.se), by Annica Sääf Andersson.
   3.2. Studying the University of Skövde presentation [3] and academic system.
   3.3. Exploring robotics information : NAO, e-Puck and iCub, including related scientific publications and implementation.
   3.4. Sitting-in #7 course Scientific Theory of Informatics.
4. 30 Sep-04 Oct
   4.1. Programming NAO using Visual Studio .NET
   4.2. Academic discussion about doctoral studies in University of Skövde with Erik Bergström.
   4.3. Sitting-in on Prof. Göran Falkman class.
   4.4. Sitting-in on Prof. Tom Ziemke class.
5. 07 Oct-11 Oct
   5.1. Another Academic discussion about doctoral studies in University of Skövde with Erik Bergström.
   5.2. Attending International Office Meeting with students about Studying Overseas, meet with Elizabeth Persson.
   5.3. Sitting-in on Dr. Paul E. Hemeren class.
6. 14 Oct-18 Oct
   6.1. Self exploration about research at University of Skövde
   6.2. Self-exploration to know more about University of Skövde
7. 21 Oct-25 Oct
   7.1. Accessing of supporting documents/scientific publications for research such as papers and journals through University of Skövde network
   7.2. Meeting with head of International Office, Elizabeth Persson.
   7.3. Writing lab material (slide) about Simulating NAO Motion using Visual Studio.NET.
   7.4. Meeting with Deputy vice-chancellor of internationalization, Prof. Afrouz Behboudi.
   7.5. Attending Vice-chancellor (rector) Prof. Sigbritt Karlsson meeting.

8. 28 Oct-01 Nov
   8.1. Attending evaluation/audit result announcement at Götasalen.
   8.2. Research activity discussion about action topic with Dr. Paul E. Hemeren.
   8.3. Self-access to human action and activity databases.
   8.4. Participating in IEEE webcasting about computer/machine vision in industry.
   8.5. Library visitation and access the available facilities in the library.
   8.6. Research activity discussion about computer security topic with Dr. Marcus Nöhlberg.
9. 04 Nov-08 Nov
   9.1. Research activity discussion about computer vision topic with Prof. David Vernon.
   9.2. Physical access to NAO robot vision/camera and its capabilities to perform vision-based processing .
   9.3. Self-exploration to computer vision research center.
   9.4. Self-experimenting with several framework for computer vision and machine learning
   9.5. Report preparation: Full Report, Summary Report and Research Plan
10. 11 Nov-15 Nov
   10.1. Research activity discussion about informatics/cognitive science topic with Dr. Serge Thill.
   10.2. International Dinner of Interaction Lab people (Tom, David, Paul, Tom, Serge, Eric, Gauss and Me).
11. 18 Nov-22 Nov
   11.1. Attending Ph.D. Defense, Henrik Svensson, supervised by Prof. Tom Ziemke
   11.2. Research meeting with Prof. Tom Ziemke
12. 25 Nov-29 Nov
   12.1. Finishing Summary Reports.
   12.2. Finishing Daily Activity Report (Log).
   12.3. Finishing Final Report.
   12.4. Finishing Attachments.

Output

1. Laboratory manual: 'Nao Programming using .NET and Webots'
2. Preliminary draft (idea) of research proposal: 'Automatic Video-based Human Activity Recognition and Classification'
3. 40-page draft student handbook of Computer Graphics course
4. 40-page draft student lab handbook of Digital Image Processing course
5. Modified slide about University Padjadjaran and additional information
6. Slide : 'Informatics Research @ Informatics Department'
7. BLOGS : 'http://blogs.unpad.ac.id/setiawanhadi'
8. Current papers published in informatics journals and conferences
9. Human action and activity databases
10. Activity report summarized from web, discussion etc.

Analysis and Evaluation

Mapping that showed relation of design and implementation are conducted to how implementation results (activitiesand outputs) correlated with designed tasks, outputs and outcomes. The result of mapping of activitiesand designed target are presented on the Table 1, Table 2 and Table 3, and visualized on the Figure 1, Figure 2and Figure 3, respectively. The result of mapping of outputs and designed target are presented on Table 4. Theoverall performance is calculated and displayed on Table 5.

Mapping Outputs with Designed Targets

The resulted outputs are mapped into designed activities (tasks), outputs and outcomes. It is presented in the Table 4.

Measuring Overall Performance

To get the whole picture of the SAME program performance, a simple calculation is performed based on the real activities and resulting output. The result is presented on Table 5.

Table 1: Mapping Activities During The SAME Program, September 2013

Week	Interval	Activity	Task	Output	Outcome
1	09 Sep-13 Sep	Guided tour of University of Skövde by Anette Andersson, checking room and facilities at Informatics Research Center (IRC, Portalen).	4, 5	4	4
		Meeting with Dr. Niklas Torstensson and Dr. Tarja Suzi at Informatics Research Center.	4,5	3,4	3,4
		Meeting with Prof. Tom Ziemke, introduced to several researcher at IRC.	1	4	1,2,4
2	16 Sep-20 Sep	Attending doctoral defense of Sanja Jurcevic.	1, 4, 5	4	1, 2
		Discussion with Dr. Björn Olsson.	2	4	1
		Discussion via email with Prof. Tom Ziemke about sitting-in a course.	4,5	4	3,4
		Sitting-in at Prof. David Vernon course: Scientific Theory of Informatics.	4,5	4	3,4
		Discussing with Gauss Lee about robot Nao.	1,3	3,4	1,4
3	23 Sep-27 Sep	Explanation of internet, printing and communication facilities including information that can be extracted from HIS web (www.his.se), by Annica Sääf Andersson.	4,5	4	4
		Exploring the University of Skövde presentation [3] and academic system.	4,5	4	4
		Exploring robotics information : Nao, e-Puck and iCub, including related scientific publications and implementation.	1	3,4	1,2,3
		Sitting-in #7 course Scientific Theory of Informatics.	4,5	4	3,4
4	30 Sep-04 Oct	Programming NAO using Visual Studio .NET.	1	3,4	1,2,3
		Academic discussion about doctoral studies in University of Skövdewith Erik Bergström.	1,4,5	3,4	3,4
		Sitting-in at Prof. Göran Falkman class.	4,5	4	3,4
		Sitting-in at Prof. Tom Ziemke class.	4,5	4	3,4

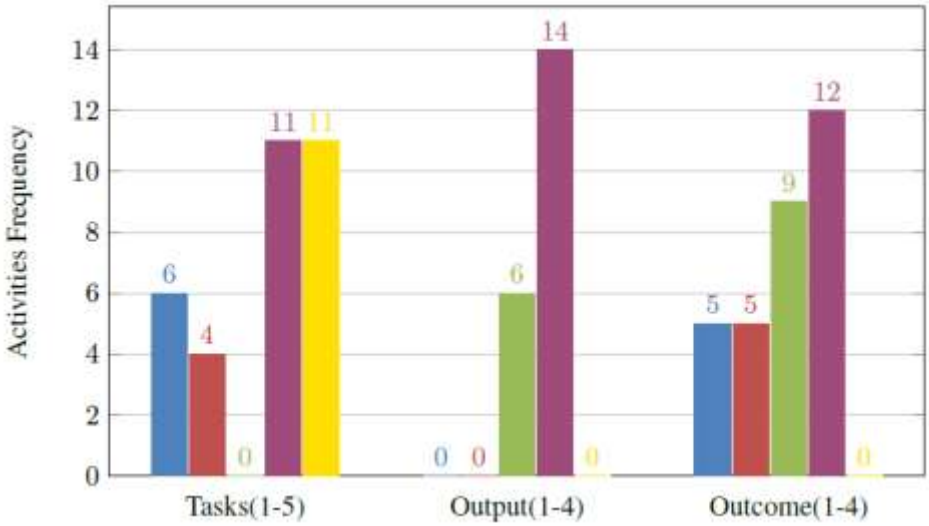

Figure 1: Visualization of Designed-Target and Activities, September 2013

Table 2: Mapping Activities During The SAME Program, October 2013

Week	Interval	Activity	Task	Output	Outcome
5	07 Oct-11 Oct	Another Academic discussion about doctoral studies in University of Skövdewith Erik Bergström.	1, 4, 5	3, 4	3, 4
		Attending International Office Meeting with students about Studying Overseas, meet with Elizabeth Persson.	4, 5	4	3, 4
		Sitting-in at Dr. Paul E. Hemeren class.	4, 5	4	3, 4
6	14 Oct-18 Oct	Self-exploration about research at University of Skövde.	1, 2, 3	1, 4	1, 2
		Self-exploration to know more about University of Skövde.	4, 5	3, 4	1, 2, 3, 4
7	21 Oct-25 Oct	Accessing of supporting documents/scientific publications for research such as papers and journals through University of Skövdenetwork.	4,5	4	4
		Meeting with head of International Office, Elizabeth Persson.	4, 5	4	4
		Writing lab material (slide) about Simulating NAO Motion using Visual Studio.NET.	4, 5	3, 4	3, 4
		Meeting with Deputy vice-chancellor of internationalization, Prof. Afrouz Behboudi.	4, 5	4	4
		Attending Vice-chancellor (rector) Prof. Sigbritt Karlsson meeting.	4, 5	4	4
8	28 Oct-01 Nov	Attending evaluation/audit result announcement at Götasalen.	1, 4, 5	1, 4	1,2,3, 4
		Research activity discussion about action topic with Dr. Paul E. Hemeren.	1, 2, 3, 4	1,4	1, 2, 4
		Participating in IEEE webcasting about computer/machine vision in industry.	1	4	1
		Library visitation and access the available facilities in the library.	1, 5	4	1, 4
		Research activity discussion about computer security topic with Dr. Marcus Nöhlberg.	1, 2, 4	4	1, 4

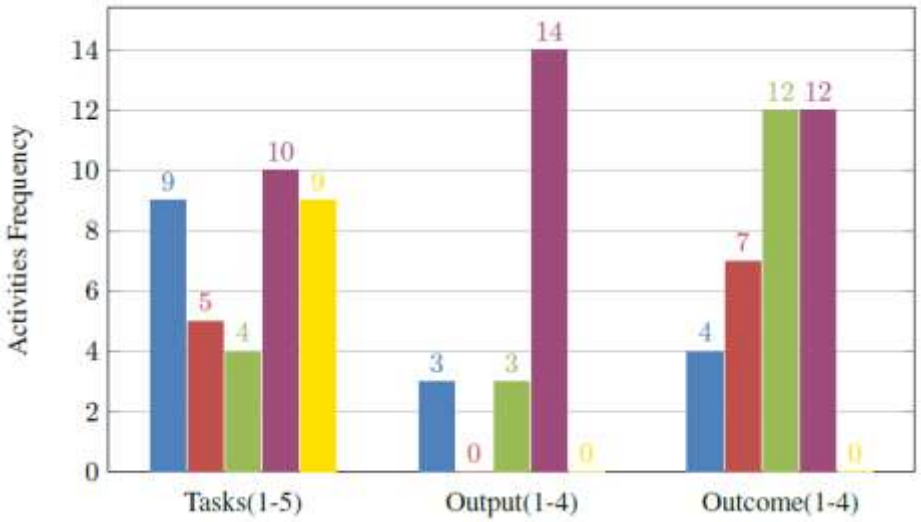

Figure 2: Visualization of Designed-Target and Activities, October 2013

Table 3: Mapping Activities During The SAME Program, November 2013

Week	Interval	Activity	Task	Output	Outcome
9	04 Nov-08 Nov	Research activity discussion about computer vision topic with Prof. David Vernon.	1, 2, 3, 4	1, 4	1, 2, 3, 4
		Physical access to NAO robot vision/camera and its capabilities to perform vision-based processing.	1, 2, 3	3, 4	3
		Self-exploration to computer vision research center.	1	4	1, 2, 3
		Self-experimenting with several framework for computer vision and machine learning.	1	1, 3, 4	1, 2
		Report preparation: Full Report, Summary Report and Research Plan.	1,2,3,4,5	4	4
10	11 Nov-15 Nov	Research activity discussion about informatics/cognitive science topic with Dr. Serge Thill.	1, 2, 3, 4	1, 2, 4	1, 2, 4
		International Dinner of Interaction Lab people (Tom, David, Paul, Tom, Serge, Eric, Gauss and Setiawan).	1,2,3,4,5	4	4
11	18 Nov-22 Nov	Attending Ph.D. Defense, Henrik Svensson, supervised by Prof. Tom Ziemke.	1, 4, 5	4	1, 2
		Research meeting with Prof. Tom Ziemke	1, 2, 3, 4	1, 2, 4	1, 2, 4
12	25 Nov-29 Nov	Finishing Summary Reports.	1,2,3,4,5	4	4
		Finishing Daily Activity Report (Log).	1,2,3,4,5	4	4
		Finishing Final Report.	1,2,3,4,5	4	4
		Finishing Attachments.	1,2,3,4,5	4	4

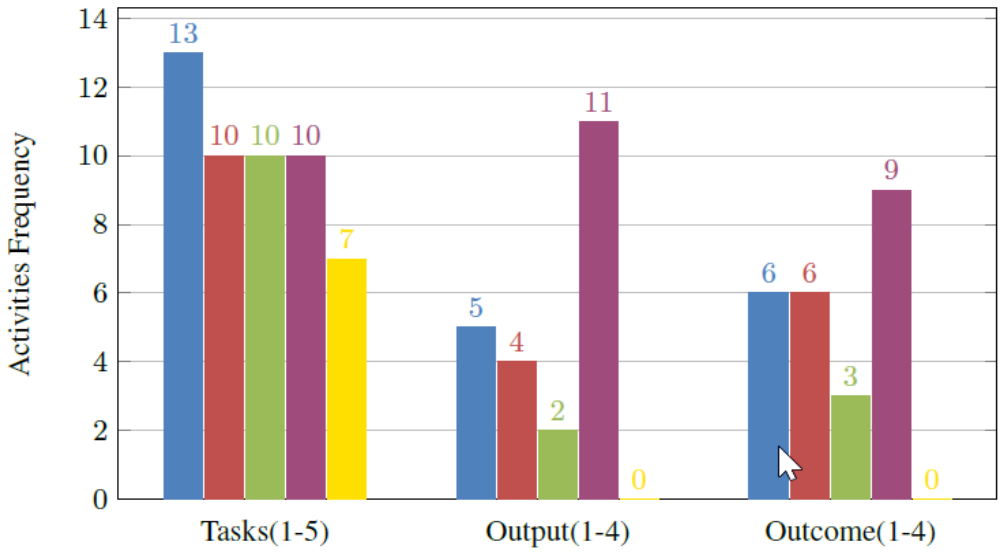

Figure 3: Visualization of Designed-Target and Activities, November 2013

Table 4: Mapping Outputs of The SAME Program

Activity	Task	Output	Outcome
Laboratory manual: 'NAO Programming using .NET and Webots'	4	3	3
Preliminary draft (idea) of research proposal: 'Automatic Video-basedHuman Activity Recognition and Classification'.	1, 2, 3	1, 2	1, 2, 3
40-page draft student handbook of Computer Graphics course	4, 5	3	3
40-page draft student lab handbook of Digital Image Processing course	4, 5	3	3
Modified slide about University Padjadjaran and additional information	5	4	4
Slide : 'Informatics Research @ Informatics Department'	1, 2, 3	1, 2, 3	1, 2, 4
BLOGS : 'http://blogs.unpad.ac.id/setiawanhadi'	4	4	4
Current papers published in informatics journals and conferences	1, 2, 3	1, 2, 3	1, 2
Human action and activity databases	1, 2, 3	1, 2, 3	1, 2
Activity report summarized from web, discussion etc.	1, 2, 3, 4, 5	4, 3	1, 2, 3, 4

Table 5: The SAME Performance

Target		Activity	Output	Total	Percentage
Tasks					
	Discuss research topics	28	5	33	23.40
	Develop collaborative research	17	5	22	15.60
	Discuss possibilities of joint publications	14	5	19	13.48
	Discuss possibilities academic exchange and mobility	27	4	31	21.99
	Undertake a comparative study	23	4	27	23.08
	Draft of research proposal	8	4	12	15.38
	Draft of paper and/or book chapter	4	4	8	10.26
	Draft of teaching and learning material	10	6	16	21.33
	Activity report/overview report, experiences, including curriculum design and exchange and mobility scheme	39	3	42	53.85
	Research quality improvement	15	5	23	22.33
	Publication quality improvement	14	5	19	19.39
	Teaching/learning quality improvement	18	5	24	23.30
	Cooperation quality improvement	33	4	37	35.92

Information that can be inferred from the table shows the performance based on designed target and their implementation. For example, the target activity 'Discuss research topic' is conducted in 28 real activities and related with 5 real outputs. The performance value is 23.40%, calculated from sum of real number of activities and outputs, over total tasks. This number means that the task 'discuss research topic' took 23.40% activities in the SAME program. It is noted that, in this case, the performance of Outcomes is qualitative measurement.

Acknowledgment

The author would like to say thank you very much to all the people of the University of Padjadjaran and the University of Skövde, the Directorate General of Higher Education, Ministry of Education and Culture, Republic of Indonesia, that already involved and supported for this useful international event.

Conclusion

The Three-month activity in University of Skövdegave an incredible experience and learn from a small and modern university that offers first-class programs and competitive research, which attract research scientists and students internationally. The 2013 audit result showed that the University of Skövde is one of the most specialized universities in Sweden that focused its research on the development and use of advanced information technology systems and models.

The target of the SAME program has been realized in the form of activities and outputs. The conducted activities are discussion, literature study, visitation, presentation, and any other related activities. The outputs of these activities are research plan, teaching and learning materials, slides and other reports. These will give good outcomes to improve the quality not only individually but also institutionally.

Based on the analysis of activities and results, it can be concluded that the composition of the SAME program that is conducted at University of Skövde is : 24.49% is research quality improvement, 19.39% is publication quality improvement, 23.47% is teaching/learning quality improvement and 32.65% is cooperation quality improvement. These numbers showed that the SAME program has reached the target in the holistic context.

Partnership between the University of Padjadjaran dan the University of Skövde should be continued and improved to gain mutually benefit result for both universities and can contribute to academic and scientific community in all over the world significantly.

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