

# Engaging students in Community Based Research

Shop for Societal Driven Research Experience



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Shop for Societal Driven Research Experience

## **Course**

Academic Consultancy Training, YMC60809, project 436

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## Summary

Science Shops are not 'shops' in the traditional sense of the word, they provide independent, participatory research support in response to concerns experienced by civil society. The contribution of students in the Science Shop Wageningen UR is of major importance; the presence of students increases the strength and dynamism of this institution. Nowadays students seem to play a less prominent role at the Science Shop Wageningen UR. The problem of Science Shop Wageningen UR is that it takes a long time to fill the vacancies of projects with student researchers. The aim of this research was to investigate the current recruitment strategies of students and analyse how these strategies can be improved.

The study described the used strategies of project leaders to recruit students and the strategies that students used in their search for a (thesis) project at Science Shop Wageningen UR. This study concludes that the network is most important to either find students by project leaders or a (thesis) project by students. Students who did a project within the Science Shop Wageningen UR described that they liked the practical implications of their research but students did not mention they were appealed by conducting CBR.

The following recommendations are made for the Science Shop Wageningen UR. Firstly increase the visibility of the Science Shop. Secondly the network used by project leaders can be enhanced by keeping more contact with thesis coordinators and supervisors. Also the help of student mediators could help to broaden the network. The network also relates with the visibility: the more visible you are, the easier the network can be improved.

Finally, future research could explore the position of the Science Shop Wageningen UR in marketing terms; is the Science Shop an institution where a student can find a practical project or an institution that bridges the gap between science and society? As students stated they were attracted by the practical research, there should be a focus on this element. However students should be reminded about the core philosophy of the Science Shop which is performing CBR. With better insights in to the position of the Science Shop Wageningen UR, the promotion and recruitment activities aimed at students can be better specified.

## Acknowledgement

This report is written within the Academic Consultancy Training of the Master's program of Wageningen UR. However this project was not the first choice of most of the team members, but in turned out for all of us to be an interesting, dynamic problem which was a challenge to investigate. Starting this project we did not really knew how tot translate the problem 'Engaging Students and Society in Science' into a narrow research question. After several conversations with our commissioner Gerard Straver and our coach Marloes van der Kamp we were able to formulate a suitable research question. After finishing our research proposal 'the real' investigating begun: taking interviews with project leaders, students and the two Science Shops of Tilburg and Groningen. We would like to thank the interviewees again for their time. Moreover our thanks go to Natalia Eernstman who put us back on track, when we lost the structure (especially within the literature); Marloes, who fulfilled her job as a coach very well, but also for her input on the content part; and of course a lot of gratitude is going to Gerard Straver, for giving us the opportunity to investigate this universal problem and for always being very cooperative during this process.

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# 1 Introduction

Science Shops are not 'shops' in the traditional sense of the word. "A Science Shop is a unit that provides independent, participatory research support in response to concerns experienced by civil society" (Fokkink & Mulder 2004, p. 2). The contribution of students in the Science Shop Wageningen UR is of major importance. They carry out (part of) the research in the form of a thesis or an Academic Consultancy Training (ACT) project or a capita selecta (free course). ACT is a compulsory course in each study program in Wageningen University that provide MSc students an opportunity to apply their scientific knowledge into practice by dealing with a practical issue. Moreover the presence of students increases the strength and dynamism of this institution. Students have a fresh look on a project, and look at the problem from a different angle (personal communication, Jet Proost and Gerard Straver, Wageningen University, March 2009). In the early years of the Science Shop Wageningen UR showed a lot of student participation, and the Science shop itself and her purpose was more known amongst students (Staal, 1993). Nowadays students seem to play a less prominent role at the Science Shop Wageningen UR, it takes a long time and a lot of effort to find students for projects. Sometimes there are not any students found for a project, so researchers have to be hired to carry out the research. These researchers are more expensive and they do not have the added value of the students. So the problem of Science Shop Wageningen UR is that it takes a long time to fill the vacancies of projects with student researchers. The aim of this research is to investigate the current recruitment strategies of students and analyse how these strategies can be improved.

The rest of this report is organised as follows. In chapter 2 a research description is given with a conceptual framework, description of the Science Shop, problem analysis, the objectives of the report and the methodology of the research. In chapter 3 the project leaders and their role are described next to their recommendations. The evaluation of students who have been involved at the Science Shop is described at chapter 4, their recommendations are also given. Other Science Shops and their strategies of recruiting students are given in chapter 5. The different strategies used by the interviewees are compared in Chapter 6 and the recommendations for the Science Shop Wageningen UR are described. The conclusion of the research are shown in chapter 7.

## **2 Research description**

This chapter describes the conceptual framework, the problem analysis, the objectives and methodology of this study.

### ***2.1 Conceptual framework***

#### **2.1.1 Stepping down from the ‘Ivory Tower’**

For a long period science and society have been separate entities, with hardly any exchange (De Bok & Steinhaus (2008). Often this has been referred to as the ‘Ivory Tower of science’: scientists who are living above the world with hardly any idea what is going on in society. Nowotny, Scott & Gibbons (2001) are describing the importance of two-way communication between science and society. The university as ‘Ivory Tower’ is described by Mode-1 science. The traditional view of the university’s engagement with science emphasized two aspects: its role as a producer of knowledge and ‘knowledgeability’. The first aspect refers to the form of scientific results (and other knowledge products) or in the form of scientifically trained persons. ‘Knowledgeability’ goes along with these trained persons; ‘knowledgeability’ creates an enlightened, more literate and scientifically rational society. Under the regime of Mode-1 science, the universities exercised scientific dominance through their production of ‘pure’ research. The university also played a key role in the formation of future elites, social and technical, thus stimulating ‘knowledgeability’. To summarize Mode-1 science is a model of knowledge production and stands for the elite university as an ideal social institution. Society does not play a role yet in this model.

The Mode-2 of science and society leads to better integration of these two entities. However it were the universities which showed interest in societal applications of science. This is Mode-2 science: knowledge which is being generated ‘in the context of application’. Nevertheless scientists still decided whether which study or scientific information of knowledge transfer was desirable or relevant, hence a rather one-way communication. In recent times there is growing interest of society in the applications of science, with the result that society becomes also the demanding party for science (Mode-2 society) (Nowotny et al., 2001). With Mode-2 society universities are de-institutionalized more; scientists took a step down from their ‘Ivory Tower’. This was necessary because the call from society for scientific knowledge and understanding became bigger. Knowledge centres, like the Science Shop, can fulfil this role of bridging the gap between science and society (De Bok & Mulder, 2004). The many requests Science Shops receive nowadays, shows that there is more and more demand for scientific research from society (De Bok & Steinhaus, 2008).

Farkas (2002) describes three theoretical models on how to engage science in society. Firstly, the representative model: scientists represent the interests of society when they do their research or when working in projects. Scientists try to take up issues which are relevant from the perspective of society in their research. Secondly, the engagement model: scientists cooperate with policy makers to make plans for society. This is done in addition to their own research. Scientists take on the

responsibility for representing the interests of society when participate in policy making. Thirdly, the partnerships model: scientists and citizens both work together in the process to generate knowledge. The first two models focus more on the level where policy is formulated. In the partnership model the focus is shifted towards a lower level: trying to change how science is performed. In this model, society is more than just a place where data can be collected. Citizens are actively involved in generating knowledge. This is done by performing participatory research and Community Based Research (CBR). Science Shops are a good example of a partnership model. The Dutch Science Shops were based on the idea that universities had to play a more prominent role in the solution of social and environmental roles. Nowadays, Science Shops strengthen their function as a bridge between universities and society. Civil society organisations (CSO's) which have a problem or research question can go to the Science Shop to request for information or a solution to their problem. CSO's are organisations whose members have objectives and responsibilities that are of general interest and who also act as mediators between the public authorities and citizens (Fokkink & Mulder, 2004). Science Shops offer students the opportunity to do CBR and make it possible for community groups and CSO's to get access to university research resources (De Bok & Steinhaus, 2008).

### **2.1.2 Step towards Community Bases Research**

Hills and Mullett defined Community Based Research (CBR) as “a collaboration between community groups and researchers for the purpose of creating new knowledge or understanding about a practical community issue in order to bring about change. The issue is generated by the community and community members participate in all aspects of the research process” (Hills & Mullett, 2000). In other words, CBR present a mutually beneficial partnership of academic researchers (universities, professors and students) and community members who collaboratively engage in research with the purpose of solving a pressing community issue or effecting community development.

There are a few principles which distinguish more orthodox forms of research with CBR. Green et al. (1997: 53) describe the distinguishing characteristics as follows:

1. Community Based Research is participatory. CBR is relevant to the community and requires community involvement.
2. Community Based Research is collaborative. CBR is a knowledge exchanging process between community and science.
3. Community Based Research is transformative. The result of CBR should benefit the community and enable to effect social changes.

In general, the critical distinction between CBR and orthodox research is that CBR emphasizes conducting the research based on practical community problems and that community members are actively involved in all aspects of the research process.

### **2.1.3 Start of the Science Shops**

Science Shops link the three university missions: education, research, and knowledge transfer to society. They benefit the society, students and the university. The Science Shop also functions as an antenna or starting point for new research themes (Hende & Jørgensen, 2001). And most importantly they strive to bridge the gap between science and society. Science Shops are often, but not always, linked to universities; students and researchers from the university conduct the research for civil organisation with no, or little financial means. In the early 1970 students in Europe were focused on making science more accessible to a larger public: the democratization of universities. Science was only confined to universities and not accessible to society. Common teaching methods within universities were theoretical and monodisciplinary. Furthermore science was not directly linked to problems in society. Only some results from technological developments (e.g. solutions to environmental problems) were becoming visible. These events led to an increasing demand for change from society. Among other in the Netherlands there was a demand for more applied research and education within universities. Some critical university staff and students joined forces to help civil society organisations in society with this quest. They introduced project education as well as lecture based classes. Their efforts came together with a growing environmental awareness and the development of civil societal organisations. The Science Shop emerged on the waves of the movements (De Bok & Steinhaus, 2007).

In the last three decades Sciences Shops in the Netherlands have been faced with various challenges from changes in national government policies to reorganisations in universities (Wachelder, 2003). By the 1980s most Science Shops became more integrated into the structure of universities due to changes in national policy which supported this development. This development turned Science Shops more and more into professional mediators thereby changing their ideological foundation. The main focus of the Sciences Shops was at enlarging the impact science on society. In three general ways can be identified which reflect how the science shops tried to adapt changes in these three decades to increase their survival changes (Wachelder, 2003): 1) some Science Shops became a volunteer organisation in which students provided non-profit services, 2) other Science Shops became more market oriented research centres and focused more on providing professional advice and 3) other Science Shops focused more on public relations: trying to enhance their relation with the region where the where located. This was done to increase the image of the university in the region whereby also the name of the Science Shop was promoted.

### **2.2 Science Shop Wageningen UR**

Over the years a lot has changed concerning the Science Shops. Nowadays, the Science Shop Wageningen UR consists of a coordinator and approximately twenty project leaders. The project leaders are employees at Wageningen UR (or sometimes an external contact). They are responsible for the communication between the Science Shop Wageningen UR and the civil societal organisations with their research request. They will search for researchers, preferably students, and are assigned with the 'finishing tasks', like bringing out a press release, setting up a

symposium, publications etc (Wetenschapswinkel Wageningen UR, 2008). The number and kind of project leaders varies through time and depends on supply of research requests. See appendix 1 for a flowchart which shows the process from receiving a societal research question until finishing until writing a project proposal.

The Science Shop Wageningen UR aims to bridge the gap between Wageningen UR and the society by carrying out scientific research on behalf of the citizens and civil society organisations. In 2004 the Science Shop Wageningen UR was reorganised. Before the reorganisation the Science Shop Wageningen UR was a department with an executive, project workers, and a secretary. After the reorganisation there is only one central coordinator, Gerard Straver and a secretary. The Science Shop Wageningen UR has different contacts within the university. First it has a contact person within each of the five sciences groups of Wageningen University<sup>1</sup>, in addition to contact persons for the ACT and Van Hall Larenstein (Straver, 2008a). Secondly it asks advice from an Advisory Board consisting out of ten persons: coming from the universities knowledge departments, the staff department Education and Research and the coordinator and the secretary of the Science Shop themselves. Figure 2.1 shows the organisational structure of Wageningen UR and it shows the different research institutes.



**Fig. 2.1 Organisation chart of Wageningen UR (The Science Shop Wageningen UR is connected to the five sciences groups and it has his own advisory board) (source: wageningenuniversiteit.nl)**

Thus the Science Shop Wageningen UR is no longer a separate department within the university, but nowadays it is a network organisation (Straver, 2008b). In the

<sup>1</sup> These are i) Agrotechnology and Food Sciences Group, ii) Animal Sciences Group, iii) Environmental Sciences Group, iv) Plant Sciences Group and v) the Social Sciences Group.

beginning of the reorganisation these contact persons of the knowledge departments were very useful, but nowadays Gerard Straver established his network, so the contact persons are more on the background. Compared to other Science Shops, the Science Shop Wageningen UR not only has access to the expertise of university departments but also from the other research institutes and Van Hall Larenstein (VHL).

### **2.3 Problem analysis**

In the early years of the Science Shop Wageningen UR showed a lot of student participation, however today students seem to play a less prominent role. Participation of students does not only benefit the Science Shop and its clients, but also the students themselves, as they come to understand how to respond to societal questions in a scientific matter. The number of students needed to perform the research is not the problem. Although students participating in Science Shop Wageningen UR projects increased during the last years, it still takes too much effort and time for the Science Shop project leaders to find students to perform the research (personal communication, G. Straver coordinator of the Science Shop Wageningen UR, March 2009). The consequence is that many vacancies remain unfulfilled, so the project leaders assign the vacancies to employees of Wageningen UR. This non-participation of students could lead to reduction of the strength and dynamism of the Science Shop Wageningen UR. Students have an added value for the projects, because they have a fresh look, and they look at the problem from a different angle. Moreover expensive to hire researchers instead of students, in this way a big part of the budget will be taken by researcher costs and this could lead to less projects.

### **2.4 Objectives**

The main objective of this study was to investigate the reasons why project leaders need much time and effort to fill in the vacancies for (thesis) projects at Science Shop Wageningen UR.

This objective is specified in three research questions:

1. Which strategies are used by project leaders of the Science Shop to find students for Science Shop Wageningen UR research projects?
  - *How do you recruit your students?*
  - *Which methods or channels do you use to recruit students?*
  - *Do you have an idea which channels are more successful?*
  - *Do you have an idea which channels are less effective?*
  - *How do you think student get involved in the Science Shop?*
  
2. Which strategies are used by formerly involved students in the Science Shop to find their (thesis) project?
  - *Which steps did you take, and what channels did you use to come to your Science Shop project?*
  - *Did you know the Science Shop before engaging in a project?*

- *What criteria do you have for a thesis?*
3. What are the advantages, disadvantages and opportunities of the used strategies by project leaders and students?
- *Do some topics attract more students than other topics or not?*
  - *Do you have any recommendations to improve the recruitment of students?*
  - *Which recommendations do you have for the Science Shop?*
  - *The Science Shop uses different channels, to reach students etc. What is your opinion about these channels?*
  - *To your opinion what is the purpose of the Science Shop?*
  - *The Science Shop does Community based research, why do you think it is important that Students get experience in doing societal based research?*
  - *Do you think it is important for a further career to do CBR?*
  - *How did you perceive working with the Science Shop?*

## **2.5 Methodology**

This is an explorative study, since the subject 'Engaging students in Community Based Research' in relation to Science Shop Wageningen UR has not been studied before. For this interviews with open-ended questions were used to gather the information needed for this study (annex 2, 3, 4). In total twelve interviews were done: four students, four project leaders, one researcher and one communication advisor. This number of four project leaders and four students started as a guideline with the thought that four subjects could already generate a great amount of insights for this explorative study. If this was not the case, afterwards more interviews could be done. After finishing this number of interviews time constraints appeared to be the bottleneck to broaden this number.

Furthermore two employees of other Science Shops were interviewed. The first one was the head of the Centre of Knowledge Transfer in Tilburg, where the Science Shop Tilburg is part of. The second employee was the coordinator of Beta Science Shop of Groningen.

The students and project leaders were selected from the name list which was given by Gerard Straver, the coordinator of Science Shop Wageningen UR. Chosen was for a convenience sample: searching for students who were still living in or around Wageningen. Another criterion was that subjects were involved in Wageningen UR. Students who did a project for the Science Shop UR, but originated from another university were excluded. Project leaders were randomly selected from the list.

Since all of the interviewees were involved in Science Shop Wageningen UR, their first-hand/personal experience and perception provided valuable insights for this study. The interview with the project leader contained questions about their tasks as a project leader, their preference for research topics and their used recruitment strategies and channels. Moreover we asked for their recommendations. The student's questionnaire covered questions with their methods and channels how they found their project at the Science Shop Wageningen UR, so the 'search strategies' they applied. Also questions about criteria for a (thesis) project (e.g. topic, kind of

organisation, payment). We were also interested in their experiences with the Science Shop Wageningen UR; if they perceived it positively or negatively. Additionally, questions were asked how the students think it is important to do CBR. Recommendations were asked concerning the Science Shop Wageningen UR itself and for recruitment strategies.

The communication advisor was interviewed because she was involved in Science Shop Wageningen UR and gave workshops to project leaders towards how to carry a project and how to find students. The interview with the communication advisor was about the current communication plans of the Science Shop Wageningen UR. This interview was to generate further ideas for the recommendations from an expert's view.

The interviews with the other Science Shop employees covered topics like their organisational structure, their recruitment strategies and channels and their recommendations towards Science Shop Wageningen UR. Next to the interviewed students we used ourselves as research subjects to describe our opinion towards CBR.

The analysis of the interviews was done by firstly filtering the relevant questions out of the questionnaire, and secondly clustering these questions in categories. This concerned the interviews with project leaders, students and the other Science Shops. The transcript of the researcher is integrated in the analysis of the project leaders. The reason for this choice was that this researcher was also assigned with the task to recruit student researchers, just like most project leaders have to do.

After clustering the categories, we analysed information from the interviews for matching strategies; thus if the recruitment strategies and channels of the project leaders matched with the 'searching strategies' of the students; and looked for strategies which did not match. On the basis of this analysis, recommendations were formulated for Science Shop Wageningen UR.

### **3 Interview results project leaders**

Four project leaders were interviewed. One of them is a teacher of the Wageningen University and Research Centre (WUR), the other a policy maker at the WOT Nature & Environment (Wettelijke Onderzoekstaken Natuur & Milieu, a department of the WUR), the third one a teacher at Van Hall Larenstein (who worked until 2007 at the WUR) and the last project leader is originating from an external company, but works sometimes at the WUR. The average amount of projects they led in the past are around two or three. Two out of four project leaders did not face the problems of the recruitment of students; however they mentioned that colleague project leaders did face these problems. One of the interviewee who were not confronted with this issue, delegated the task of recruiting students to his PhD student (who was the 'main researcher' of this project) and the other project leader who did not faced problem wrote only an ACT description because she only leaded ACT projects for the Science Shop. Nevertheless all the project leaders were asked for recommendations and their used strategies.

#### ***3.1 Recruitment strategies of project leaders***

The recruitment strategies were investigated by asking questions about the channels and strategies used by the project leaders. Furthermore the effectiveness of the used strategies was asked.

The project leaders used the following recruitment strategies:

- Network of project leaders
- Focus on coordinators; try to convince teachers and module coordinators about the interesting and relevant topics for the students
- Blackboard/Intranet: thesis list and practical list (as a result of first talking to teachers and coordinators)
- Lecture talk: short talk in the beginning of a lecture, with PowerPoint/movie, where a lot of potential student researchers are present
- Posters
- ACT description
- Delegate it to PhD student (main researcher), probably the PhD student used mailing
- (Mailing study association; mentioned by researcher)

Three out of four project leaders used their network in different ways. The network of project leaders is used to find supervisors. One project leader said: "The network is important and effective. A university teacher knows his students individually". These university teachers will function as a supervisor within the project of the Science Shop. After finding a (potential) supervisor, the next step for the supervisor is to find student researchers. Another way to make use of the network is by convincing teachers and module coordinators that the topics are interesting and that they fit the themes and modules students are following or have followed. Consequently the

Science Shop Wageningen UR projects can be added to the topic lists for projects offered to students. This strategy was mentioned by a project leader originating from Van Hall Larenstein.

The ACT description is the standard procedure for recruiting students. This is more a passive strategy; compared to the use of the network: "I just write a project description and just wait for the reaction". Posters are also a passive strategy. It was perceived as not very effective by the project leader who made use of it. The lecture talk was tried once. The concerning project leader received positive reactions but his timing was bad because the students already had chosen a project.

Another player in conducting researchers for the Science Shop Wageningen UR are the 'main researchers', so the paid employees of the WUR. The project leader can delegate them the task to recruit the student researchers: "I delegated the task to my PhD student, who was also researcher in the project. I think she just send the vacancy around in a mailing". One main researcher was interviewed, who was assigned by his project leader to recruit students. He did not face the problems of putting too much effort in finding students: "I did not face problems with recruiting students, but with meeting the demands of the students. Some only wanted to do a capita selecta, other a thesis and other wanted to get paid". He recruited the students by sending a message to the study association. The study association put his message in a weekly mail which is send to all students. It could be that 'employee researchers' tend to use mailings to find students, but more research should be done about this topic.

Conclusions can be made about the importance of the project leaders' network. The involvement with supervisors and thesis coordinators seems to be a necessity. The way supervisors recruit their student researchers was not investigated. The project leaders think that supervisors go personally to the students or by a general mailing. More research in the strategies of supervisors is necessary to gain better insights in the recruitment of students.

### ***3.2 The perception of the used strategies by students***

This category was investigated by asking the question: "How do you think students get involved in the Science Shop Wageningen UR?" This question was asked to get insights in the possible match or mismatch; maybe students go for complete different channels, than what the project leaders think.

Two keywords which were generated:

- website
- supervisor

Two project leaders thought that students visited the website of the Science Shop Wageningen UR. One project leader thought via the supervisor, and one project leader had totally no clue. We noticed when asking this question, project leaders thought it was a difficult question.

Project leaders never thought about the strategies which students use to find a project at Science Shop Wageningen UR.

### **3.3 Recommendations from project leaders**

Recommendations were asked about the improvement of the recruitment strategies of student researchers. Items that were mentioned were:

- Science Shop Wageningen UR should become more visible like a real shop: a counter at the main university building, involve study advisors, posters, lecture talks etc.
- Image of the Science Shop: promote what the Science Shop is offering, e.g. good supervisors, involved supervisors which a student can learn from
- Improve the ACT site, so that project leaders have more insight in the available students
- As a project leader it is needed to get more insight on what is going on in the university and students: e.g. the way of working (periods/trimesters), which subjects, projects etc.
- Involve the thesis coordinators, study advisors, study associations
- Parallel looking for students and project leaders, instead of first project leaders and than students; do it at the same time

These recommendations can be split up in three ways. Firstly the visibility of the Science Shop Wageningen UR in general: counters, posters, promoting the Science Shop Wageningen UR as a good institute to write your thesis etc. In other words: improve the image and visibility of the Science Shop Wageningen UR. Secondly, is improving the involvement of thesis coordinators, study advisors and study associations, the so-called network; this goes also along with the visibility. If the thesis coordinators, study advisors and study associations know what the Science Shop Wageningen UR is offering, they can promote that towards the students. Thirdly, the involvement of project leaders within the university and students. “How many students with which specialisation are present at the University (e.g. how many landscape students are there), how many will need a project, and how many projects are there in that working field (e.g. how many landscape projects are there)?” Furthermore this project leader wanted to know which projects students need: internships, Bachelor or Master theses, or other. This was a recommendation from the ‘external’ project leader, but this was also mentioned as a recommendation of the main researcher: “Get into the student world. Get in touch with study associations and supervisors.”

To summarize the three most important recommendations are: visibility, make good use of the network and the third one is that project leaders should get deeper into the student world.

## 4 Interview results students

In total four MSc students were interviewed: two Landscape Architecture students and two Animal Sciences students. Three students did an MSc thesis as a project at the Science Shop. The other did a combination of a capita selecta with a minor thesis.

### **4.1 Channels used by students to find a project**

Firstly students were asked if they knew the Science Shop Wageningen UR before they engaged in a project. Three of the four students heard about it before engaging in a project. The other did not. One heard about the Science Shop through the supervisor, another from friends and one thought he heard about it already in high school when he did his 'profile thesis' in cooperation with Wageningen UR.

Next students were asked how they found their project at the Wageningen Science Shop UR. They used different information channels to orientate themselves and find a project. Mentioned channels were:

- Through the (thesis) supervisor
- Use personal network

Three of the four students came into contact with a project through their (thesis) supervisor from their chair group. Either the student went to the chair group or the chair group told the student about a project. The other student asked fellow students and friends about what is important when doing a thesis and looked at the internet for information.

All four students mentioned the chair group is a useful channel. At least one student mentioned that publications in the Resource (weekly magazine of Wageningen UR). One student mentioned that he liked that a teacher told about projects and their results at the Science Shop Wageningen UR during a class.

Summarizing, students perceived the chair group as useful channel. Especially the supervisor turned out to be the most important contact person for finding a thesis.

### **4.2 Student' criteria for choosing a thesis subject**

Students were asked to list important and unimportant criteria they use for choosing a thesis subject in general. Important selection criteria by the students are:

- Topic of the thesis
- Research needs to be practical
- The quality of the supervision

The topic of the thesis should be interesting and fit the interests of the students since a thesis takes six months. Furthermore, it was mentioned that a research should be

practical. This depends on the personal interests of the student. One student said that this kind of research can be a nice addition and another said that doing only data analysis during a thesis is not very interesting. All four students said that good supervision during the thesis is important because: 1) it makes the students more critical towards their own work, 2) students receive new ideas which and 3) students are being corrected which improves the final result of the thesis. In addition, one student liked to work together with other people. Another said “the thesis should not just be an exercise, you need to learn something from it”.

Unimportant selection criteria mentioned was:

- Payment

Students receive study points for their thesis. Additional payment for their thesis would be a nice addition but is not considered necessary. One student said “getting study points for your work is like getting paid”. Another student stated that the “the budget of a project makes the project easier but not the personal payment”.

Selection criteria which were perceived as neutral

- Image of organisation
- Type of organisation

Students were asked to rate both the image and the type of the organisation where is thesis is performed for. The image refers to the reputation the organisation has in society. The type refers to the kind of organisation, e.g. university, company, NGO. Both characteristics were perceived as neutral, meaning neither important nor unimportant, as a selection criteria. One student said that “when the image is bad, I do not want to work for them. Another said: “you should have a good understanding of the company but since you do not do your work at the company itself, the type of organisation is not really important”.

Important selection criteria for students to choose a thesis subject are: topic, practical research and supervision. Payment is unimportant. Image and type of organisation are neutral.

### ***4.3 Perception Science Shop Wageningen UR***

The questions related to this category mainly aimed at two aspects: firstly interviewees’ perception of Science Shop in general and Community Based Research; secondly their perception of working with Science Shop Wageningen UR. The first part of this category was investigated by asking questions about the purpose of Science Shop and their opinion on doing community based research.

Mentioned perceptions of the purpose of the Science Shop Wageningen UR:

- Doing societal based research
- It improves the image of the university by carrying out the research for people or organisations who can not afford it.

- Connecting practice and theory
- To mediate between commissioner and researchers

Mentioned reasons to do Community Based Research:

- Work for commission
- Different stakeholders involved in the project
- Different angles to view problems
- Dealing with different goals and purpose of the stakeholders
- Dealing with conflicts between different stakeholders
- Get more relevant research questions from society
- Linking research to the society

In general, the four interviewees did mention some characteristics of the Science Shop, but they did not have a clear view about the exact purpose. Nevertheless they were familiar with the core philosophy of Science Shop Wageningen UR. In addition, they all thought that doing CBR could offer them an opportunity to apply their scientific knowledge into practice, getting practical experience from it.

The second part was explored by asking about interviewees' personal experience with the Science Shop Wageningen UR.

Experiences of the students on working with the Science Shop Wageningen UR:

- Get useful information and nice ideas from the meetings with Gerard Straver of the Science Shop
- Contacts
- Freedom in performing the assignment
- Practical research
- The topic was fun, interesting
- Good communication with the Science Shop
- No difficulties during implementing the project
- Results of the research is meaningful

The four interviewees had positive impressions of their projects which they did for Science Shop Wageningen UR. They liked the forms of their projects and the way of communication with Science Shop etc, but the most fundamental character of their remark was "the topic is interesting". Moreover, all of them would be willing to choose the same project once again if they looked back and they could do it again.

Students seem to understand what the activities of the Science Shop Wageningen UR are. Only slightly a relation was mentioned between performing CBR and the purpose of Science Shop Wageningen UR. Students like to work with the Science Shop Wageningen UR because the topic and the working environment is good, moreover, students like doing CBR because it is practical.

#### **4.4 Recommendations from students**

At this part, interviewees were asked to give possible recommendations for Science Shop itself and recruiting students.

Recommendations for Science Shop itself:

- Increase the awareness of the Science Shop
- Build up a name
- Make Science Shop more known and visible within university
- More direct communication (Project leaders sometimes have an intermediary function, they have the main contact with the commissioner; that could lead to communication difficulties)
- Hire more employees
- Teachers should talk more about relevant researches of the Science Shop during class

Recommendations for recruiting students:

- When a topic is available, send email to all the students in that related chair group
- Send email with subject to the board of the student association in that field of the project
- Short talk during lecture
- Give presentation about Science Shop Wageningen UR to graduated BSc students who are going to follow Master program
- Do not make a poster, because the posters might be ignored
- Spend more money on promotion

These recommendations can be oriented to three sides. 1) The Science Shop side: improving the visibility of Science Shop Wageningen UR. Interviewees suggested promoting Science Shop within the university and making it more visible like a real 'shop', however, making a poster was not advised. 2) The intermediating side (between Science Shop and students): improve the communication methods of relevant people within the university (thesis coordinators and study advisors). Interviewees preferred more direct communications with involved contact persons than the project leaders who were from outside the university (these external project leaders sometimes have a lack of 'WUR knowledge'; schedules, courses, etc.). 3) The students' side: increasing the awareness of the Science Shop Wageningen UR. Interviewees pointed that students' awareness of the Science Shop Wageningen UR is low and this poor consciousness could be one of the reasons that Science Shop Wageningen UR has difficulties with finding students. Moreover the students recommended holding promoting campaigns to let more students know the Science Shop Wageningen UR is an available access for them to find (thesis) projects.

The three most important recommendations are: increase visibility of the Science Shop, improve the communication and create more awareness of Science Shop among students.

## **4.5 Ourselves and Community Based Research**

This paragraph describes the interpretation of ourselves, WUR students about the CBR and the Science Shop. We discuss our own perceptions and opinions about these two topics.

### **4.5.1 Our opinion on carrying out Community Based Research**

We were not really familiar with CBR. It sounded like a left-wing minded Droevendaal activity. Carrying out CBR was for none of the interviewed students a criterion for a thesis, we agree on that. But then again, the result of doing CBR is important to us, that the research is really being used. Our major criterion also matches with the ones of the interviewees; we think that the topic is most important.

Since three out of four team members originate from Management, Economics and Consumer studies, the preference for a thesis project goes to a multinational. We are more commercially oriented and think that doing CBR cannot fulfill our wishes, since the projects are mostly from smaller societal organisations like NGO's and local governments. Nevertheless we are attracted by the practical implications of what Science Shop projects offer.

### **4.5.2 Our perception of the Science Shop**

At the beginning of the project, we were not familiar with the concept of the Science Shop. It was something totally new: the whole theory about the 'Ivory Tower' was not known to us, this was also the case with the purpose of the Science Shop 'bridging the gap between science and society'. The activities of the Science Shop and how it is structured (e.g. connection project leaders, supervisors, students) was not clear. Moreover the projects which were used as an example were rather 'typically Wageningen', like only projects for local 'green organisations'.

This image changed in the time of this ACT project. The purpose of 'bridging the gap' became clearer and we made the connection that our scientific knowledge should also be available for community. Since Wageningen UR is already an applied university, we were familiar with research which is already closer to society. That was one of the reasons why we did not really saw the difference between the 'usual Wageningen UR projects' and the projects of the Science Shop. But for a physics student, for example, who only works with theoretic models, he could benefit much more from doing CBR.

We still assume that Wageningen UR is already a university for community with its applied science; our 'Ivory Tower' is already quite open. But as mentioned in the previous paragraph we are appealed by the practical aspects of the projects of the Science Shop and that your results are really being used. For that reason we would choose to do a project for the Science Shop. The types of projects appeared not only to be 'green', but covered also other topics. The topic stays the most important criterion when choosing a thesis project.

Our conclusion is that the unique selling point of the Science Shop Wageningen UR is that it offers practical projects. The Science Shop should investigate how it wants to position itself: as a bureau where you can find a nice thesis or other project, or as an institute which wants to bridge the gap between science and society. Of course it is important to always keep in mind the core philosophy of the Science Shop.

## 5 Science Shops: Tilburg & Groningen

Two other Dutch Science Shops were visited and interviewed: the Science Shop at the University of Tilburg and the Beta Science Shop<sup>2</sup> at University of Groningen.

### 5.1 Science Shop structure

The Science Shop of the University of Tilburg has a different structure compared to Science Shop Wageningen UR. They have student involvement on an organisational level in the form of student mediators, which was interesting to investigate. In addition the Beta Science Shop at the university of Groningen was visited because the coordinator; Henk Mulder, has much experience in coordinating the Beta Science Shop and he also has international experience.

#### 5.1.1 Organisation of Beta Science Shop

There are five different Science Shops within the University of Groningen, each Science Shop represents a department: Economics & Business; Medical Science & Public Health; Education; Language, Culture and Communication and Science Shop Faculty of Mathematics and Science. This last Science Shop is part of the Science & Society Group, which is a group within the faculty Mathematics and Nature Sciences, which in every day language is referred to as the Beta Science Shop. The organisational structure of the Beta Science Shop and their strategies to recruit students will be analysed and compared with Science Shop Wageningen UR.

There are two employees at the Beta Science Shop; Karin Ree en Henk Mulder. They have 20 years experience in Science Shop work. These coordinators have their office in the building of the faculty, so they have direct contact with students and teachers.

The coordinator Henk Mulder is responsible of the process of the projects. He works 1.5 days for the Science Shop and next to these 2 days a week as lecturer and spends 1.5 days other activities within the university. The professors are in charge of the project itself, they are the scientific supervisors, and it is part of the teachers work. There are no students involved at an organisational level, but they are setting up a student advisory board at this moment. So the students will have some influence on organisational level of the Science Shop in the future.

The Beta Science Shop gets its request by mail, phone or by their website. The Beta Science Shop also contacts organisations they have worked with before. After receiving a request, Henk Mulder approaches teachers and looks for experts and they analyse together if the project is feasible. To recruit students they place an advertisement of the project at the university paper under announcements of that specific faculty.

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<sup>2</sup> Officially in Dutch: Bèta Wetenschapswinkel; official English name: Science Shop Faculty of Mathematics and Science

There are projects from commissioners which are too big and have to be split up and some projects are too specific and do not meet the criteria for Community Based Research, so these projects have to become larger.

The projects are mainly Master theses but also bachelor theses and sometimes group work. There are study advisors who send students, whom lack credits, to the Beta Science Shop to do a project for them so they will receive the missing credits; this is a kind of open course (*capita selecta*). In total the Science Shop carries out  $\pm$  28 projects a year.

### **5.1.2 Organisation of Science Shop Tilburg**

The Science Shop of Tilburg is part of the Centre of Knowledge; in this centre other organisations like the Centre for Medium and Small enterprises are also covered (Loket Middel en Klein Bedrijf) and an organisation for student entrepreneurs. This Science Shop consists of one coordinator and four 'student mediators', hence the students are also involved at an organisational level. The student mediators originate from four different study departments (Social Sciences, Law Faculty, Economics Faculty and Humanities Faculty). Each of them works one day a week, who receives the same loan of a student assistant in Tilburg. Most of these student mediators start their job when they are 2<sup>nd</sup> or 3<sup>rd</sup> year student. It takes around half a year to get to know the job, so it is preferably that they stay for 1.5 till 2 years.

When an organisation comes to the Science Shop Tilburg for a request for a project, the Science Shop encourages the client to fully express their wishes. The coordinator and a student mediator both visit the client. If there is an arrangement the student mediator will contact supervisors (or other) and looks for student researchers to carry out the research. The student mediator is in charge of the organisation of the research project.

The projects which the Science Shop Tilburg offers to students are group work, thesis for Masters and Bachelor students and bigger projects. It is also possible to hire a student who can work for the organisation; it all depends on the demand of the client.

### **5.2 Strategies and channels to recruit students**

At the University of Groningen there is a course called Science & Society. In this course societal research is explained and ethical dilemmas during a project are discussed. Professors and also researchers are also involved in this interactive course. During this course the 2<sup>nd</sup> year students are informed about the Science Shop. The main channel to reach students is face to face conversations with students; the personal network of the Beta Science Shop coordinators. Because they are also teachers, they know many students and teachers, so their network is very broad. There are also students who come to the Beta Science Shop spontaneously.

The Beta Science Shop organised a speed date with students, commissioners, teachers and researchers in 2008. First several relevant organisations were invited, afterwards Henk Mulder approached students and study associations if they would join the speed date and if they were interested in the company. It was not difficult to find the students, because the offered topics by the organisations were appealing to the students according to Henk Mulder. Only for the Physics students it was difficult because the project topics were not related to their studies. Because of this successful number of subscriptions, Henk Mulder expanded the number of organisations and students. But he did this step by step, so he was certain that there would be enough interested students at the speed date and that there were enough interesting organisations for the students. During the speed date there were three rounds of each 10 minutes to get to know each other and to tell about the project<sup>3</sup>. Summarizing, the personal network and the direct conversations are very effective to find students for their projects.

The Science Shop of the University of Tilburg has the following strategies to recruit students:

- Asking thesis coordinator/ potential supervisors if they are interested in the projects
- On the website of the Science Shop Tilburg information about the current vacancies is available
- Potential student researchers can subscribe on the website of the Science Shop. (see appendix 5 for an example)
- On strategic places are posters and brochures available (pictures in appendix 5)
- There are advertisements in the university paper
- Lecture talks about the Science Shop Tilburg
- The Science Shop makes use of the student associations and their network.
- Tilburg Matchpoint (website where organisations and companies from Tilburg can look for students who can do an internship, thesis or research for them and the other way around)
- The student mediator network: the mediators originate from different departments; so they can look around in their network if there are potential student researchers

The use of the several strategies and channels enhances the familiarity of the Science Shop Tilburg amongst students. No strategy is more effective than another; so the combination makes it effective and makes it relatively easy to find students for the projects.

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<sup>3</sup> More information: <http://www.rug.nl/wewi/dewetenschapswinkels/betawinkel/nieuws/index>.

### **5.3 Recommendations from the other Science Shops**

The coordinator of the Science Shops from the University of Groningen and Tilburg had the following recommendations on organisational level and on the level of recruiting students:

- Combine activities with for instance an internship bureau and exchange more knowledge between the different bureaus.
- Increase the involvement of students on an organisational level. This could be done by the use of student mediators. If possible reserve part of the budget to hire student mediators. The student mediators can help with the organisational activities and they can make use of their personal network of fellow students and teachers of their faculty. As a consequence more people are involved in the Science Shop; it will become more visible amongst the whole university.
- Increase the visibility of the Science Shop Wageningen UR. The image of the Science Shop Wageningen UR could be enhanced if students, teachers, researchers and other employees of Wageningen UR know what the Science Shop does and what the advantages are for them.
- Improve your network. For instance make use of a mailing list; students can apply for the mailing list which contains news about the Science Shop and organise a speed date with commissioners (CSO), students and project leaders.

The recommendations from other Science Shops are: cooperate with relevant organisations, get students involved in organisation level, increase visibility and improve network.

## 6 Comparison of the strategies

In this chapter the results from this study are discussed. A connection is made between students and their view on CBR and a flowchart is presented which shows the process for finding students by Science Shop Wageningen UR.

### 6.1 Students view on Community Based Research

Farkas' (2002) theoretical models were described on how to engage science in society. These are:

1. The representative model: scientists represent the interests of society when they do their research or when working in projects.
2. The engagement model: scientists cooperate with policy makers to make plans for society.
3. The partnerships model: scientists and citizens both work together in the process to generate knowledge.

According to Farkas (2002) Science Shops are a good example of the third model. Results from this study do not seem to confirm this statement. The results gave the impression that students perceive the Science Shop Wageningen UR as a combination of the second and the third model instead of the third model exclusively.

Main reasons for students to choose a thesis project at the Science Shop were the topic, the practical implications and the quality of the supervision. The Science Shop Wageningen UR aims to bridge the gap between the university and the society. This core philosophy was only partly mentioned by any of the students. The students perceive doing projects at Science Shop Wageningen UR as an opportunity to apply scientific knowledge into practice, to gain practical knowledge. The students did mention the cooperation with different stakeholders (dealing with different goals and purposes, conflicts) but no-one seems to make the connection to generate the knowledge. This aspect of 'generating knowledge together' is critical for the partnership model. The engagement model suits with the perception of students of the purpose of the Science Shop: they cooperate with citizens, but rather to develop themselves, than to bridge the gap between science and society. Moreover it is still more the one-way communication, like Nowothny, Scott & Gibbons (2001) described. Although society asked for a research question, it is still the scientist (the student) who decides whether or not to engage in the project. Researchers still decide whether or not the problem is relevant to investigate.

It was stated that Green et al (1997:53) described three principles which distinguish CBR from other kinds of research:

1. CBR is a relevant to the community and requires community involvement.
2. CBR is a knowledge exchanging process between community and science.

3. CBR should benefit the community and enable to effect social changes.

These principles closely resemble the theoretical models as described by Farkas (2002). Both describe what CBR is and how it could be applied. A difference between them is that the principles describe more precise the conditions which have to be met before a research can be labeled as CBR. All three principles can be applied for the use of ACT to conduct research students for the Science Shop Wageningen UR. In the ACT Cases offered by this Science Shop: 1) the research subject is relevant to society because most of the times it is put forwards by society, 2) there is an interaction between stakeholders and students and 3) the outcome of the research are aimed at solving the research subject put forwards by society. In the selection criteria for choosing a thesis project, students did not really mention one of the principles. Like in the comparison with Farkas' models, this could indicate that students engage in CBR for the practical aspects, rather than for the 'bridging function'.

## **6.2 Flowchart of 'finding students' process**

To analyse the steps which are taken from receiving a societal research question until the publication of the outcomes of the Science Shop Wageningen UR study two flowcharts were made using Microsoft Office Visio 2007. A flowchart is a chart that represents a process. The flowchart on the next page (Fig. 6.1) gives an overview of the mentioned strategies from project leaders and students. Several processes are shown in this flowchart based upon the results from the interviews with the project leaders and students. Moreover this flowchart shows whether a process operates well (green lines) or that the process and connection should be improved (orange lines). The processes and connections with the dotted lines were mentioned in the interviews but are not a part of this study.

Fig. 6.1 indicates that the networking is the most important recruitment strategy and appeared to be the most successful strategy and is therefore green. The network of a project leader needs to be maintained and be broadened, for that reason it is indicated with an orange line. The network is being used both by the project leaders and by the students. The relationships of actors in the network (project leaders, students, thesis coordinator, supervisor) create pathways in which information can be shared and spread (Lim, 2008; Rindfleisch & Moorman 2001). The information flows in these pathways are used to recruit students.

The other strategies (posters, lecture talk, Blackboard / intranet) need to be improved. ACT description is a passive strategy: project leaders make a description and just wait for a reaction. Perhaps it is possible to make it more active, by for example give small presentations about the topics for potential ACT students. The dotted line represents the 'delegation strategy'. In some cases project leaders delegated the recruitment task to their main researchers. Fig 6.1 also shows the necessity to improve the visibility of Science Shop Wageningen UR (by the improvement of e.g. posters, presentations, Blackboard/intranet).

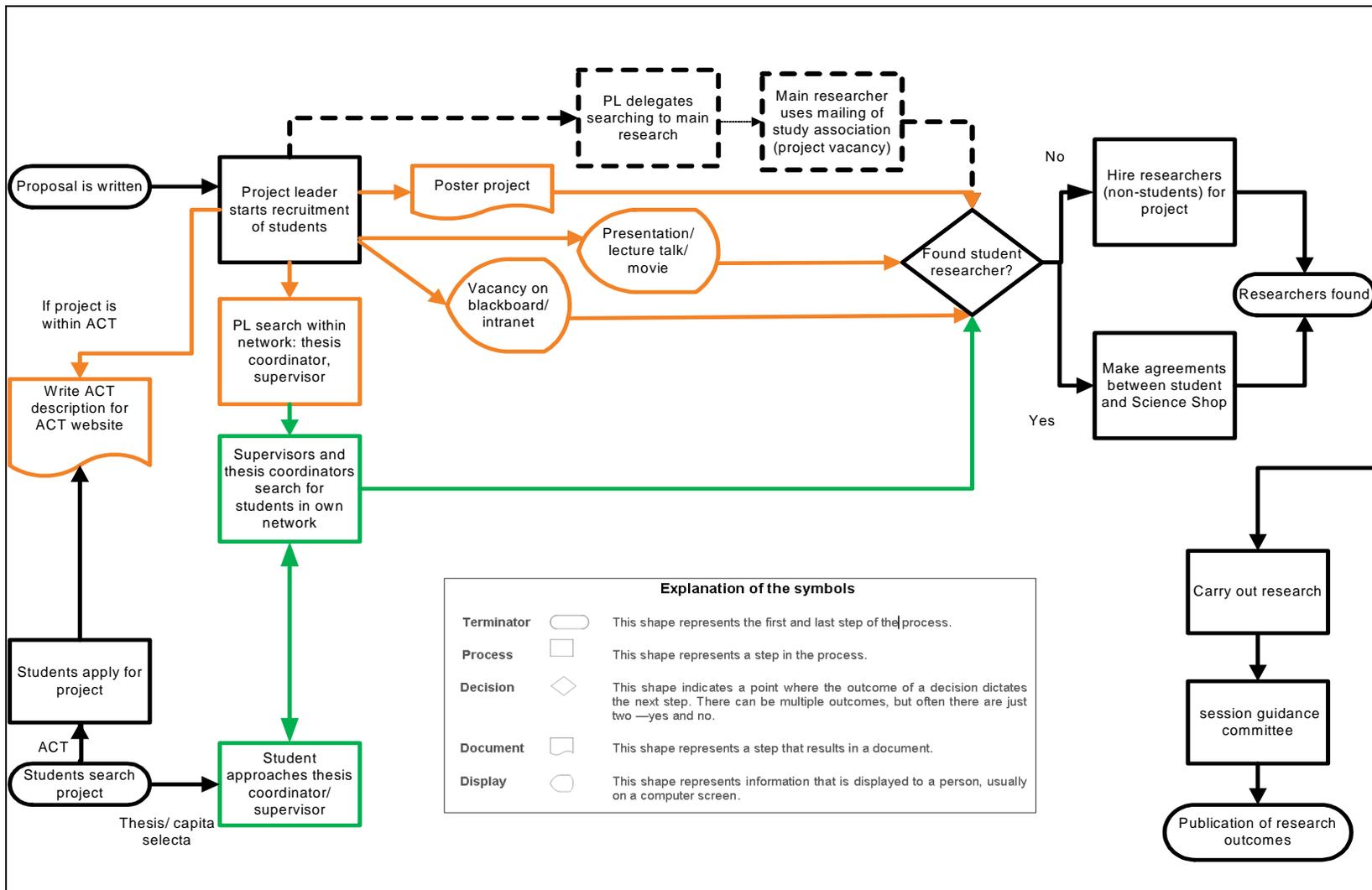
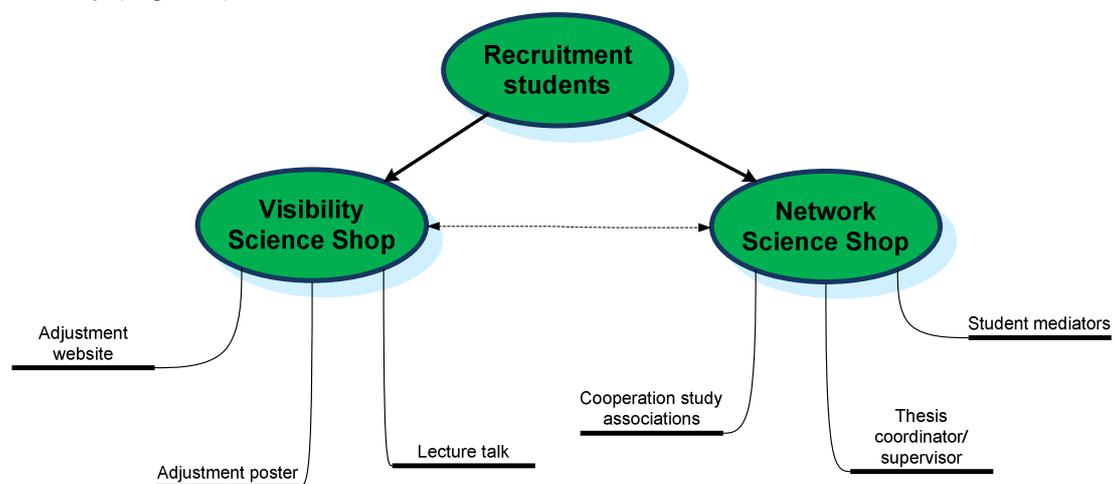


Fig. 6.1 Flowchart showing the strategies of project and students.

From the interviews it became clear that when students seek a (thesis) project, their attitude and beliefs towards a topic, supervision etc. plays an important role in influencing which strategy they use to find a (thesis) project. Therefore it is critical for recruiters (project leaders) to understand how to systematically influence these beliefs. According to Barber (1998 in Collins (2006)) students may develop their attitude through exposure of recruitment efforts or through non-recruitment sources of information, like product awareness. In this report product awareness is defined as the awareness of Science Shop Wageningen UR. Moreover, students can develop their attitude by picking up the cues of non-recruitment exposure, for example by posters. The next step is that their attitude will be changed by active recruitment strategies (e.g. speed date with commissioners and students) (Barber, 1998).

To get students involved in the Science Shop projects more easily, Science Shop Wageningen UR should create the awareness of itself before it can influence students' beliefs regarding their reputation and other relevant information (e.g. Science Shop as a good institution to learn practical research) (appendix 6). Several researchers (Cable & Turban, 2001; Collins & Han, 2004, cited in: Collins, 2006) found when job seekers were more attracted to companies when they were aware of their products and services. The same can be applied to the Science Shop if students are considered as job seekers. For students to become more aware of the products and services of the Science Shop, the Science Shop has to increase its visibility (Fig. 6.2).



**Fig. 6.2 Overview of the generated recommendations by project leaders, students and Science Points.**

## 7 Conclusion

This study described the used strategies of project leaders to recruit students and the strategies that students used in their search for a (thesis) project at Science Shop Wageningen UR. This study concludes that the network is most important to either find students by project leaders or a (thesis) project by students. Students who did a project within the Science Shop Wageningen UR described that they liked the practical implications of their research and mainly the topics. The students did not mention that they chose this project to generate knowledge together with society. Thus the model of Farkas (2002), Science Shops as a partnership, is not in accordance with this thought. The core philosophy of the Science Shop 'as bridging the gap between university and science' was also not mentioned by any of the students. The students were attracted by the practical elements of what the Science Shop Wageningen UR is offering and did not mention they were appealed by conducting CBR.

Due to the number of interviewees (four students, four project leaders) it is difficult to generalize the results of this study. The diversity of the sample could be improved since only students from two different study programs were interviewed. Moreover two project leaders did not face recruitment problems. A more representative research population and perhaps a bigger sample would have been better. In addition supervisors turned out to play a larger role in recruitment of students. This group was lacking in this study and should have been investigated. The questionnaire was more aimed at recruitment strategies rather than on students' perception on CBR.

The following recommendations are made for the Science Shop Wageningen UR. Firstly increase the visibility of the Science Shop. This was suggested by the interviewed students, project leaders and the other Science Shops. Secondly the network used by project leaders can be enhanced by keeping more contact with thesis coordinators and supervisors. Perhaps it is needed to broaden this network by adding new contacts. The help of student mediators could help to accomplish this. More involvement of students on organisational level can expand the Science Shop's network amongst students. The network also relates with the visibility: the more visible you are, the easier the network can be improved. Finally, future research could explore the position of the Science Shop Wageningen UR in marketing terms; is the Science Shop an institution where a student can find a practical thesis topics or an institution that bridges the gap between science and society? Interviewed students stated that they were attracted by the practical topics offered of the Science Shop. We, as students share their opinion. However students should be reminded about the core philosophy of the Science Shop which is performing CBR. With better insights in to the position of the Science Shop Wageningen UR, the promotion and recruitment activities aimed at students can be better specified.

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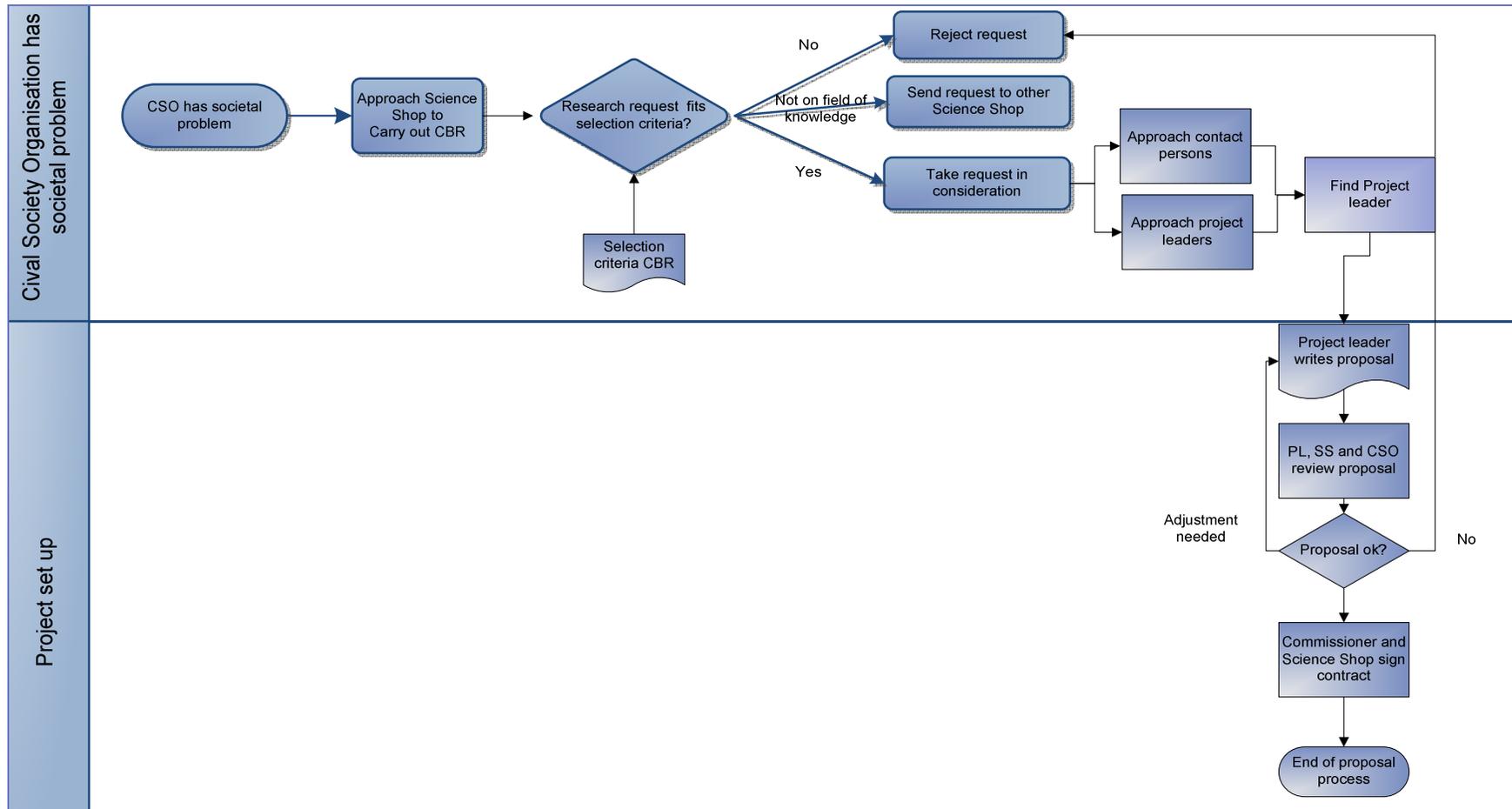
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## Appendix 1: flowchart start Science Shop project



## Appendix 2: interview project leaders

### Questions project leaders

Name:

Department:

Intro Science Shop project:

We do an ACT project for the Science Shop, because they noticed it takes a lot of time and effort to find students for the several projects.

1. From your point of view how the organization of the Science Shop does works, regarding the steps from project – to University – to project leaders – to students/researchers?

Approximately, how many projects did you lead for the Science Shop?

2. What kind of projects do you lead for the Science Shop?

ACT / Thesis/ Other

3. What are important selection criteria to choose a project? (*Note: first let interviewee name a few criteria, fill these in at point a*)

a) Topic

Unimportant	Less important	Neutral	Important	Very important

What makes it important or not?

Time

Unimportant	Less important	Neutral	Important	Very important

What makes it important or not?

b) Topic (criteria for topic)

Unimportant	Less important	Neutral	Important	Very important
				X

What makes it important or not?

c) Image of commissioner (employer/ organisation)

Unimportant	Less important	Neutral	Important	Very important

What makes it important or not?

- 4. Which criteria are less relevant when choosing a project?**
- 5. What kind of students are you looking for?**
- 6. Do you actually face the problem of putting too much effort in finding students or not?**
- 7. Do some topics attract more students than other topics or not?**
- 8. How do you recruit your students?**
- 9. Which methods or channels do you use to recruit students?**
- 10. Do you have an idea which channels are more successful?**
- 11. Do you have an idea which channels are less effective?**
- 12. How do you think student get involved in the Science Shop?**
- 13. Do you have any recommendations to improve the recruitment of students?**
- 14. Could you provide names of WUR students who might be willing to participate in an interview?**

## Appendix 3: interview students

### Questions students

Name:  
Study:  
Year:

#### Science Shop project

We do an ACT project for the Science shop Wageningen UR, because they noticed it takes a lot of time and effort to find students for the several projects.

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- 1. Have you worked for the Science Shop?**
- 2. Questions about what you have done for the Science Shop**
  - a) ACT (AMC) project/ thesis:
  - b) Subject:
  - c) When & period:
- 3. Questions about which steps you took to come to your project**
  - a) How did you orientate yourself in relation to the project/ thesis?
  - b) Which channels did you use?
  - c) Who was the contact person? Chair group/ study coordinator?
- 4. Questions about knowledge of the Science Shop before engaging in a project**
  - a) Did you know the Science Shop before engaging in a project?
  - b) If yes, how did you hear from the Science shop or her projects?
  - c) The Science Shop uses different channels, like internet/ recourse / chair groups/ posters to reach students etc. What is your opinion about these channels?
- 5. Purpose of the Science Shop**
  - a) To your opinion what is the purpose of the Science Shop?
  - b) The Science Shop does Community based research, why do you think it is important that Students get experience in doing societal based research?
  - c) Do you think it is important for a further career?
- 6. Perception of working with the Science Shop**
  - a) Did you like it or not?
  - b) Why?
  - c) Did you face difficulties or not?
  - d) If yes, what kind of difficulties?
  - e) Which words pop up in your mind when you think about the Science Shop?
  - f) Why important?
  - g) How was the communication with the Science Shop?

*(Interviewee has done thesis for Science Shop)*

When de SS get's a project, the SS looks for employees within the WUR (employees/ researchers) who can and want to lead the project. They are in charge of the project.

- h) Did you have contact with the project leader?  
 i) If yes, how was the contact?

**7. If you look back and you can do it again, would you have chosen for the same project?**

Why?

**8. Important selection criteria for your project**

d) *Topic (criteria for topic)*

Unimportant	Less important	Neutral	Important	Very important

*What makes it important or not?*

e) *Practical*

Unimportant	Less important	Neutral	Important	Very important

*What makes it important or not?*

f) *Type of organisation*

Unimportant	Less important	Neutral	Important	Very important

*What makes it important or not?*

g) *Image of commissioner (employer/ organisation)*

Unimportant	Less important	Neutral	Important	Very important

*What makes it important or not?*

h) *Paying*

Unimportant	Less important	Neutral	Important	Very important

*What makes it important or not?*

i) *Supervision/ Feedback*

Unimportant	Less important	Neutral	Important	Very important

---

*What makes it important or not?*

j) *Other.....*

Unimportant	Less important	Neutral	Important	Very important

*What makes it important or not?*

**10. Recommendations**

- a) Which recommendations do you have for the Science Shop itself?
- b) Which recommendations do you have for recruiting students?

## Appendix 4: interview other Science Shops

### Interview for Science Shop

**University:**

**Contact person:**

**Department in Science Shop:**

### Science Shop project

**We do an ACT project for the Science shop Wageningen UR, because they noticed it takes a lot of time and effort to find students for the several projects. We would like to know your experience.**

---

### Organization of science shop

1. How is your science shop organized?
2. Which steps does the science shop take, from receiving a research request to the final carrying out the research?
3. What kind of employees does the science shop have?
4. Who is in charge to organize the research? (e.g. Wageningen UR project leader)
5. What kind of projects does the science shop offer? (Groups work / Thesis / Other)

### Strategies to recruit students

6. What strategies does your science shop use to recruit students for doing a project?
7. Which channels does your science shop use to recruit students for doing a project?
8. What strategies and channels are more effective than others?
9. What kind of students are you looking for? (selection criteria?)

### Student participation

10. What is the role that students play in Science Shop on organizational level?
11. How did you get them involved?

12. Do you also face the difficulties of getting students on organizational level involved or not?
13. If yes, what kind of difficulties?
14. What is the role that students play in Science Shop on research level?
15. Do you also face the difficulties of getting students on research level involved or not?
16. If yes, what kind of difficulties?
17. What are the opportunities of these research students?
18. What are the limitations of these research students?

**Experience Science Shops outside Netherlands (only for RUG)**

19. European Science Shop experience
20. Faced difficulties bridging gap between society and science?
21. International Science Shop experience
22. Faced difficulties bridging gap between society and science?

**Recommendations**

23. Which recommendations do you have for the Science Shop Wageningen UR on organizational level?
24. Which recommendations do you have for the recruitment of students for Wageningen UR or in general?

# Appendix 5: Science Shop Tilburg

UNIVERSITEIT  VAN TILBURG Understanding Society

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## Wetenschapswinkel

- Home
- Wetenschapswinkel
- Studenten
  - Werkwijze
  - Onderzoeksopdrachten
  - Inschrijven

### Inschrijven

Wij je onderzoek doen bij de Wetenschapswinkel? Kijk dan eens bij de openstaande [onderzoeksopdrachten](#). Je kunt je ook inschrijven als potentieel onderzoeker. Vul dan onderstaand formulier in of kom even langs bij onze bemiddelaars in P2.214. Wij houden je dan op de hoogte van interessante afstudeeropdrachten.

Naam en voorletters:	<input type="text"/>
Voornaam:	<input type="text"/>
Administratienummer:	<input type="text"/>
Adres:	<input type="text"/>
Postcode en woonplaats:	<input type="text"/>
Telefoonnr:	<input type="text"/>
E- mailadres:	<input type="text"/>
Faculteit:	<input type="text"/>
Studie:	<input type="text"/>
Afstudeervariant:	<input type="text"/>

Ik begin (vermoedelijk) af te studeren in  (maand en jaar) en ik denk dit in  af te ronden.

Heb je naast je studie relevante dingen gedaan? Deze kun je hieronder invullen.

Periode	Functie	Organisatie
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

Als je een voorkeur hebt voor bepaalde onderzoeksopdrachten, dan kun je die hier kwijt.

- 
- 
- 

Overige opmerkingen:

VERSTUUR

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Application form for student researchers on website Science Shop (University of Tilburg)



Banner display of the Science Shop at the entrance of the Centre of Knowledge Transfer (University of Tilburg)



Bulletin board at the entrance (Prisma building) of the University of Tilburg

## **Appendix 6: recommendations**

This appendix describes the practical recommendations which the Science Shop Wageningen UR can use to recruit students for the project.

### **Cooperation**

To increase the familiarity of the Science Shop within the university and to improve the network, the Science Shop could cooperate. This cooperation could exist of working together with thesis or internship bureaus to promote their projects and find students. Or a cooperation with the different study associations of the university.

In this way the Science Shop is able to expand their network and it makes it easier to find students for Science Shop projects. The Science Shop Wageningen UR could send the description of the project to the study association in the field of the project. The study association can send the vacancies for the projects to their members. In this way you will reach many students and especially students who are interested in that specific field of the project and the have knowledge about that area.

Cooperation on the organisational level of the Science Shop could be realized by making use of student mediators. Involvement of student mediators on organisational level; spend some money of the budget on students employees at the Science Shop. The student mediators can help with the organisational activities and they can make good use of their personal network of fellow students and teachers of their faculty. So hire and train student mediators. Because more people are involved in the Science Shop, it will become more visible amongst the whole University.

### **Visibility of the Science Shop**

The Science Shop is not familiar enough amongst students but also amongst teachers and other employees. 'Onbekend maakt onbemind' (unknown makes unloved) because they do not know the Science Shop they do not want to work for/ with them (personal communication, Jet Proost).

The Science Shop could make clear what it has to offer to the students; how can students benefit from the Science Shop. The image/ representation of Science Shop Wageningen UR should improve; it should be more familiar amongst students, teachers and also other employees of the university. It should be made clear what is the Science Shop Wageningen UR, what is their purpose, what are their activities and what is the advantages for the different groups to be involved. It should be kept in mind that there are different kinds of students, so different ways of approach and recruitment are needed. There used to be students representatives in every chair group, they went to monthly meetings. This has to be introduced again and they could also spread the word of the Science Shop.

The website should be more attractive for students; this could be done by making a sub-deviation of the site: a part for students, a part for commissioners and a part for the project leaders and researchers (personal interviews). The language and lay-out of these parts have to be different from each other (students more popular language,

commissioners more formal language and for the researchers more scientific). On the student's part an application form as used at the Science Shop of Tilburg could be made.

### **The projects**

The description of the project is not attractive enough; not a nice lay-out and the description have a too scientific angle. Difficult language is used and models theories are given. This description and lay out have to improve; no long and difficult texts and describe why it would be interesting for students. Also the link of the website of the commissioner should be included in the description or advertisement of the project. Some thesis assignments are sent by mail to employees of the chair groups (no teachers); these employees do not have a connection with these assignments and do not know what to do with the assignments or who to forward them to. In this way it becomes more difficult to find students for the projects.