

## **SHE PhD Project Proposal**

Can we improve medical students' ability to identify strengths and weaknesses in communicating with patients through self-reflection? M. Wagner-Menghin, Medical University of Vienna

### **Registration form**

#### **1. Overview of application information**

##### **1a. Details of applicant**

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##### **1b. Title of research proposal**

**Can we improve medical students' ability to identify strengths and weaknesses in communicating with patients through self-reflection?**

##### **1c. Abstract**

Communicating effectively and being aware of one's strengths and weaknesses are some of the physicians' key competencies. Communication curricula include didactic elements suitable for highlighting strengths and weaknesses by self-reflection. They have been shown to improve communication performance but to date no results have been presented indicating that these techniques enable students to self-reflect efficiently.

The goal of the research presented in this proposal is to investigate the effect of educational interventions requiring self-reflection on the identification of strengths and weaknesses.

##### **1d. Master of Science degree** Date and field of main applicant

- June 1995: *Mag.rer.nat* in Psychology, (5 year full-time master program), University of Vienna, Austria
- January 2000: *Dr.rer.nat* in Psychology (equals 2 year full-time program) University of Vienna, Austria
- September 2008: *Privatdozent* for Psychology, University of Vienna, Austria

##### **1e. Complete name dissertation supervisor(s)**

Jeroen van Merrienboer Jeroen, Anique de Bruin, (Schuwirth Lambert)

### **Research proposal**

#### **2. Description of the proposed research**

##### **2a. Research topic** (theoretical framework, research questions, hypotheses)

"Listen to your patient, he is telling the diagnosis". This statement provided 1904 by Osler, has driven communication skills training in the last decades. But communicating is a complex task, one that has to be refined throughout a lifetime. Taking this seriously, we would need to teach students not only skills to 'make the patient talk', but also the skills to identify own strengths and weaknesses in applying them.

Educators commonly agree that besides communication skills, the ability to identify own strengths and weaknesses is an important educational objective for medical students. For example, in the German

speaking countries this objective is amongst the seven most important objectives mentioned for communication training (Kießling et al., 2010). Commonly it is assumed that accurately identifying strengths and weaknesses is accomplished by self-reflection, so well established communication skills trainings introduced exercises requiring self-reflection (Hulsman, Harmsen, & Fabriek, 2009; Perera, Mohamadou, & Kaur, 2010; Roter et al., 2004; Yedidia et al., 2003).

These efforts have been resting on ideas on thinking, learning and professional development introduced e.g. by Dewey (1933), Schön (1983), Kolb (1984), Mezirow (1981, 1998) or Boud (1993). They understand self-reflection as a cyclic process occurring before, during and after situations to develop greater understanding of the self and the situation to better master future encounters. The selfreflection process starts with an experience and is followed by the metacognitive activities of reviewing, analyzing and planning (Koole et al., 2011; Sandars, 2009). Unfortunately this line of research has not provided empirical evidence that encouraging the thinking about one's own thinking and actions, as selfreflection is also described, helps in actually identifying own strengths and weaknesses.

On the contrary, other researchers, focusing also on student's ability in identifying strengths and weaknesses, found that subjects are not always accurate in self-judgments of knowledge and skills. For us this is relevant because judging one's own performance requires to think about one's own performance, which included clearly the metacognitive activities of reviewing and analyzing as described above. Studies comparing self-judgments against objective performance criteria found they correlate only between 0.02 to 0.65 (Colthart et al., 2008; Gordon, 1991), which is rather low. Particularly unskilled individuals are not able to identify weaknesses (Ehrlinger, Johnson, Banner, Dunning, & Kruger, 2008; Eva, Regehr, & Gruppen, 2012). This is especially true when this self-judgment targets one's own level of performance in a rather broad domain relative to a reference group e.g. "Compared to other health professionals my skills for communicating with patients are outstanding" (Colliver, Verhulst, & Barrows, 2005; Eva & Regehr, 2008).

Subsequently it has been assumed that the metacognitive activities leading to self-judgments are prone to several errors. These include the error of overemphasizing experiences with positive outcome despite weak performance (Eva et al., 2011) but also what has been called the psychological immune system keeping our self from potentially threatening information. However, there are arguments that this mechanism is eventually beneficial – the extensive self-efficacy literature has illustrated that mild overestimation of one's possibilities is a motor for performance and development (for a detailed review and discussion of this literature see Eva et al., 2012). Self-judgments based on self-reflection might thus not be a valid source for identifying strengths and weaknesses calling the concept of lifelong development through self-regulated learning into question. But in order to enable students' for life-long learning we have to improve their self-reflection skills.

Fortunately, there are already two suggestions available on how to improve the self-reflection to increase the accuracy of self-judgments on strengths and weaknesses. Guiding the metacognitive activity of reviewing and analyzing through defining a narrow situation has the potential to improve correlation between self-judgments and an external standard or experts' judgments. By defining the situation clearly it is more likely that students use information that accurately informs their self-judgment about their progress towards the external standard. In a study comparing self- and external judgments on 10 distinct communication skills correlation was 0.58 (mean correlation,  $SD=0.49$ ), which is in the higher range of the above reported correlations (Regehr, Hodges, Tiberius, & Lofchy, 1996). Also having students judge the likelihood of having each specific test-item answered correctly works better than having them estimate the percent correct in the whole examination (Eva & Regehr, 2007).

Another approach in experimental cognitive psychology targets at further improving the usage of suitable information to accurately inform the self-judgments. Stimulating the usage of suitable information available in the situation – so called cues – when reviewing and analyzing one's own performance prior to giving self-judgments has been shown to be effective. In basic metacomprehension research prompting subjects explicitly to generate keywords about the text they just read have been shown to lead to more accurate self-judgments regarding the comprehension of text. Also the instruction to generate a short summary on the text just learned and to compare one's answer with a provided summary helped students to more accurately self-judge their probability of explaining a just learned concept correctly (De Bruin, Thiede, Camp, & Redford, 2011; Dunlosky, Hartwig, Rawson, & Lipko, 2011). The cues a subject obtains out of the experience of trying to generate keywords or by comparing ones' answer to a provided standard are obviously valid in informing the self-judgments. We do not know currently if the stimulation of valid cues is effective because this stimulation forces students to selfreflect on what they have learned, or if it is effective because it guides students' self-reflection towards using the most valid cues. For example the cue of how many times the text has been read is also available in the situation, and students may reflect on this fact, however, it might for some students not be a valid cue to indicate their understanding of text.

But how may we facilitate students to use suitable cues when judging their communication with patients? Communicating with patients is a complex task making it difficult to define a situation narrowly. This problem is best illustrated by the discussion on whether execution of communication skills will eventually lead to skilled communication (Salmon & Young, 2011). This lack of operationally defined skillful communication also makes it difficult to provide students with the prompts stimulating their usage

of suitable cues to reflect on informing their self-judgments. Can the usage of suitable cues be stimulated even if we cannot make them explicit? There are results available indicating that. Having residents rate four so called benchmark videos, showing other's performance covering different ranges of the competency continuum, improved the correlation between self-judgments and external judgments significantly even without providing explicit behavioral anchors for the benchmark videos (Martin, Regehr, Hodges, & McNaughton, 1998). This intervention can be compared with providing summaries to compare the own answer against a golden standard (Dunlosky et al., 2011).

So in order to make self-reflection work for accurately self-judging communication skills we need to decide how to define narrow situations within a communication situation. Moreover, we need to learn what cues students base their self-judgments on and which of them are valid. This will eventually allow us to phrase suitable prompts stimulating the usage of cues.

### **Study 1:**

#### **Comparing students' self-judgments of communicating with patients against an external standard: How can we make that work? A critical review of instruments evaluating communication performance.**

Given that the ability to identify strengths and weaknesses has been included in outcome catalogues (Kiessling et al., 2010), educators suggested implementing didactic elements requiring selfreflections in order to enhance the ability to identify strengths and weaknesses. While early studies in other domains suggest, that students are not able to self-judge their performance accurately compared to an external standard or an external judgment later studies specified that more accuracy in selfjudging can be achieved by limiting the width of the domain to be judged and by prompting the use of suitable cues prior to giving the self-judgment (De Bruin et al., 2011; Dunlosky et al., 2011; Eva & Regehr, 2011).

But how can these principles be implemented effectively when investigating students' ability to identify strengths and weaknesses in the complex situation of communicating with patients?

### **Study 2:**

#### **Inside students' quality judgments: What cues do students base their quality judgments on when self-reflecting about their communication performance?**

It is difficult to define skillful communication that goes beyond execution of communication skills operationally (Salmon & Young, 2011). However, we experience that when discussing subjectively about performance students and teachers quite often agree in identifying the skilled communicators. But on what cues do students base their quality judgments? Although there have been attempts to capture students' self-reflections on their communication skills we do not have a systematic overview on what cues students base their self-judgments when self-reflecting on communication skills.

How can cues used by second year medical students (beginners of communication skills training) judging their performance be characterized?

### **Study 3:**

#### **Do students regarded as skilled communicators by their teachers use different cues to judge their performance, or do they use the cues differently?**

When students gain knowledge and experience in a domain, their self-judgments get more accurate compared to external criteria (Ehrlinger et al., 2008). Still, we do not know if this is the case because they use just the most appropriate cues to judge their performance or if they also use the cues differently.

Do second year students self-judging their level of communication skills differ in their use of cues depending on their communicating skill level with the patient?

### **Study 4:**

#### **"Make the patient talk": To what extent are students able to judge the quality of their opening of the patient-physician encounter and how does this relate to students' level of communication skill, as measured by an external-judgment?**

Self-judgments are not only assumed to be more accurate with high performing students (Ehrlinger et al., 2008) but also, when the domain that has to be judged is defined narrowly enough (Eva & Regehr, 2011). But does this also hold in the domain of communication skills? In this domain problems starts when one wants to define and assess skillful communication (Salmon & Young, 2011).

So comparing detailed self-judgments and detailed external judgments regarding skillful communication meaningfully seems out of reach. Nevertheless this study strives to answer the following question: Are self-judgments of students performing communication skills at a higher level more in line with external-judgments than self-judgments of students performing communication skills at a lower level?

### **Study 5:**

#### **Prompting the usage of suitable cues prior to self-judging communication skills. Does it work to make self-judgments more accurate as compared with external judgments?**

Self-judgments are not only assumed to be more accurate with high performing students (Ehrlinger et al., 2008) but also, when the domain that has to be judged is defined narrowly enough (Eva & Regehr, 2011) and students have been guided to use cues facilitating the metacognitive activities (de Bruin et al., 2011; Dunlosky et al., 2011). But can the usage of cues be prompted in the domain of communication skills, where it is difficult even to define the narrow situation?

Has prompting the use of cues prior to giving the self-judgments beneficial effects on the accuracy of the self-judgments?

## **2b. Approach** (method and setup)

### **Study 1:**

#### **Comparing students' self-judgments of communicating with patients against an external standard: How can we make that work? A critical review of instruments evaluating communication performance.**

- A literature review regarding these questions will be conducted:
- What do we know already about students' ability to identify strengths and weaknesses through self-reflection?
  - How is the ability to identify strengths and weaknesses defined operationally?
  - What do we know about improving this ability?
- What are the current approaches in identifying strengths and weaknesses in communicating with patients through self-reflection?
  - How is the ability to identify strengths and weaknesses defined operationally in the complex field of communication defined?
  - What do we know about improving this ability in the domain of communication skills?

Starting point to answer the first set of questions will be several reviews provided within the medical education field on studies featuring thinking about one's own thinking and actions. This includes reviews on literature on self-assessment e.g. (Colthart et al., 2008; Mann, Gordon, & MacLeod, 2009) as these works included papers addressing the association between the result of thinking about one's own thinking and actions, respectively the self-judgments of performance and external criteria. And it includes reviews on self-reflection e.g. (Koole et al., 2011) (Sandars, 2009) as they focus more detailed on the process of thinking about one's own thinking and actions, respectively the metacognitive activities. Suitable literature on thinking about thinking in the field of experimental psychology will be identified to learn more on how to conduct research in the field of metacognition (e.g. de Bruin et al., 2011; Dunlosky et al., 2011).

To answer the second set of questions studies explicitly located in the domain of communication skills, will be extracted from the other reviews and new studies in the field will be identified.

Discussion will focus on the following questions:

- How can we apply what we already know effectively when investigating students' ability to identify strengths and weaknesses through self-reflection in the complex situation of communicating with patients?
- How should a suitable operational definition of the ability to identify strengths and weaknesses in the domain of communication skills look like?
- How should research in this field proceed?

Discussion regarding the first question will emphasize the problems with defining narrow situations to facilitate the accurate judgment in the domain of communication skills. And it will address the problem of finding suitable prompts to stimulate the usage of cues prior to giving a judgment in the domain of communication skills.

Discussing the second question will include the suggestion to use available rating scales (e.g. MAASGlobal, or CCG) to derive a set of detailed rating questions that can be used by students themselves as well as by external judges. Available strategies to evaluate student's success in communicating or student's skills level will be discussed. It will be accepted in this phase that it might not be possible to anchor all these statements behaviorally unambiguously, as skillful communication is hardly defined operationally right now (Salmon & Young, 2011). Literature on behavioral indices in communication will serve to inform us on potential behavioral indices contributing to the rating (Langewitz et al., 2010; Roter, Larson, Beach, & Cooper, 2008).

Discussing the third question will provide suggestion on how to proceed with research in the field.

### **Study 2: qualitative study**

#### **Inside students' quality-judgments: What cues do students base their quality-judgments on when self-reflecting about their communication performance?**

Available written, video enhanced retrospection protocols (N=680) on a SP-encounter that have been collected routinely as part of a medical undergraduate-training early in the curriculum will be used

to draw the samples required for this study. Each protocol contains written reflections on three to five incidents, selected by the participants and self-judged as "successful" or "not successful". This approach was decided for as it leaves participants' freedom in defining the narrowness of the situation they want to judge. To capture the usage of cues it has been decided to provide structured prompts, with the first prompt activating what has been observed the second prompt activating the interpretation of the observed.

A constant comparative analysis, a qualitative approach aims at developing a framework that promotes the understanding of the usage of cues for self-judgments. The theoretical sampling will include protocols obtained with different SP-cases (5 cases) and different training groups (68 training groups) and from students with different communication performance outcome as rated by faculty in the subsequent exam, as the available literature makes the researcher feel, that these variable would influence the usage of cues.

The framework derived from prior theory to start the comparative analysis will include phase-of-communication and type-of-communication-skill as main themes, as in each phase different cues might be relevant and because different communication skills may require different cues to judge their quality.

Also it will include metacognitive-activities a main theme, as there are theories differing them. Emerging themes will be included in the framework during analysis. Discussion will compare the derived framework with the behavioral indices described in established approaches in evaluating communication behavior. And it will relate the derived framework with instrument suggested to capture self-judgments in study 1.

Appendix:

Text for the written, video enhanced retrospection task: Watch your recorded SP-encounter and identify up to 5 sequences where you regarded your communicating with a patient successful or very good or where you regarded it as not successful. For each sequence ...

Please describe what is happening that made the situation so successful/not successful (keywords are ok)

How could you recognize, that the situation is going on successfully/not successfully?

How can you maintain your strengths displayed in the situations and/or remediate your weaknesses displayed in the situation?

### **Study 3 correlation study**

#### **Do students regarded as skilled communicators by their teachers use different cues to judge their performance, or do they use the cues differently?**

For this study a sample of N=135 second year medical students is available. They gave consent to reevaluate their video recorded as part of a medical undergraduate-training. They all performed the case "abdominal pain", to control for case difficulty and main patient characteristics, however different persons portrayed the case. The accompanying written, video enhanced retrospection protocols are also available. Each protocol contains written reflections on three to five incidents identified in the encounter as described above.

Videos are used to have trained raters judge students' performance with an adapted version of MAAS-global to determine students level of skill displayed at this specific case. The expanded conceptual framework on the usage of cues for self-judging from study 2 is used to design indices quantifying the usage of cues during metacognitive activities. Students' video enhanced retrospection protocols are then coded to compute the indices.

The hypothesis for this study is as follows: Students communicating more skillfully with patients use other cues and use them differently than students communicating less skillfully.

### **Study 4 correlation study**

#### **"Make the patient talk": To what extent are students able to judge the level of their communication skill in the opening of the patient-physician encounter and how does this relate to an external-judgment?**

For this study a new sample of 80 second-year medical undergraduate students has to be collected. All participants will perform the phase "introduction" and "exploring requests for help" with an SP. Their video is taken. All participants will then proceed immediately to the self-judgment questions. Given enough resources it is planned to do up to three SP-encounters per student. External judgments regarding level of communication skill will be collected from trained faculty by using the videos.

The hypothesis for this study is as follows: Students with higher level of communication skill will self-judge their performance more accurately as measured by an external judgment than students with lower level of communication skill.

### **Study 5 experimental study**

#### **Prompting the usage of suitable cues prior to self-judging communication skills. Does it work to make self-judgments more accurate as compared with external judgments?**

For this study a new sample of 90 second-year medical undergraduate students has to be collected. They will be randomly assigned to one of three groups: Prompt set 1 (activating relevant

knowledge about cues), prompt set 2 (specific activation of relevant cues in the respective encounter), the no prompt group serves as a control.

All participants will perform the phase "introduction" and "exploring requests for help" with an SP. Their video is taken. The two prompt groups will then work on answering the prompt questions and subsequently have the opportunity to revise their self-judgment. The no prompt group will immediately proceed to the self-judgments. Given enough resources it is planned to do up to three SP-encounters per student. External judgments regarding level of communication skill will be collected from trained faculty by using the videos.

The hypothesis for this study is as follows: The prompt groups will be more accurate in selfjudging their level of communication skill as compared with an external judgment. Prompting situation specific cues is more effective than promoting knowledge about relevant cues.

#### Appendix:

Examples for prompts to stimulate the usage of cues

Prompt set 1: General activation of knowledge in memory

How can you recognize if the patient experiences your questions as not inviting?

How can you recognize if the patient experiences your questions as inviting?

Name as many indicators as possible.

Prompt set 2: Specific activation of relevant cues in the respective encounter (Without video)

In the past encounter were there moments when you expected or you wished the patient to utter more information in response to one of your questions? Make a cross for each of the moments you remember.

In the past encounter were there moments when you expected or you wished the patient to utter less information in response to one of your questions? Make a cross for each of the moments you remember

In the past encounter, were there moments when the patient's non verbal behavior displayed discomfort or other negative emotions?

In the past encounter, were there moments when the patient's non verbal behavior displayed relief or other positive emotions?

#### Limitations:

Although all the studies planned address important questions related with self-judgment of communication performance I will only be able to provide evidence for a limited area. All the studies will be conducted with second year students attending their first structured training in communication skills. This training will have an emphasis on asking questions about a list of required topics and on obtaining the required information from the patient in a socially acceptable way. Students are not required to work on a diagnosis at this level of training and they are not assumed to provide information to the patient about illness or treatment. However starting the endeavor of learning more on how to improve the ability to identify strengths and weaknesses at the very beginning may have the advantage to learn more on how students learn to be good communicators. And once we have successfully defined a research paradigm we can more easily expand it to other groups of students and physicians.

Another limitation is that this first set of studies is conducted with simulated patients. It has been questioned if the experience related with simulated patient training can be transferred to real life situations. Still, we see some benefit in starting the journey of learning more on how to improve ability to identify strengths and weaknesses in the setting of simulation. First of all we can control the complexity of cases portrayed by the SP, thus keeping task specific content knowledge manageable for the second year students. And we can obtain data for a sample of students using the same case with the same personality – keeping patient personality a constant will put more emphasis on the differences in using behavioral cues. And once we have successfully defined a research paradigm we can more easily expand and adapt it in a real life setting.

Improving something in a classroom situation is one part of the story – but what about transferring this to a real life situation? Due to the pilot character of all of the studies we are not able to address effects of transfer within this research project, although we consider transfer important. The last limitation is connected with the topic of research itself. Studying how people think may influence this thinking. In order to learn from available material the first set of studied does not include experimental conditions to control for this. Only the last studies include a control condition.

## 2c. Literature references *Max. 35 references*

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## 2d. Time plan

Month	
1.	Work on Study 1 Review article
2.	Work on Study 1 Review article, Prepare materials for ethical board (Study 4 and 5)
3.	Finish first draft Study 1 Review article
4.	Prepare to work Study 2
5.	work on Study 2, second draft of Study 1
6.	work on Study 2,
7.	Finish first draft Study 2, submit Study 1
8.	Prepare materials for Study 3
9.	Prepare instruction for rater training Study 3
10.	Collect ratings Study 3
11.	Work on study 3
12.	Second draft Study 2 <b>Data collection for Study 4 and 5 have either be done in April/May 2013 or April 2014</b>
13.	Work on study 3
14.	First draft Study 3
15.	Prepare materials for Study 4
16.	
17.	<b>Collect data study 4 (?)</b>
18.	
19.	Work on Study 4
20.	Work on Study 4
21.	First draft Study 4
22.	Prepare materials for Study 5
23.	
24.	<b>Data collection for Study 4 and 5 have either be done in April/May 2013 or April 2014</b>
25.	
26.	
27.	Second draft Study 4
28.	<b>Collect data study 5 (?)</b>
29.	
30.	Work on Study 5
31.	Work on Study 5
32.	Work on Study 5
33.	
34.	
35.	
36.	Second draft study 5

**2e. Scientific setting** Main publication(s) of applicant. If available, list publications:

**Publications/Creative Work (5 most important; for others see CV)**

**2007**

Wagner-Menghin, M. M. & Dietrich, N. (2007). Towards the development of behavioural-measures of impulsivity: Influencing subject's response style in a multiple-choice visual discrimination task. *Psychology Science*, 3, 255-270.

Wagner-Menghin, M. M. (2007). Conception and Construction of a Rasch-scaled measure for self-confidence in one's vocabulary ability. *Journal of Applied Measurement*. 8(1) 35-47.

**2006**

Wagner-Menghin, M. M. (2006). Understanding Rasch Measurement: The Mixed-Rasch Model: An Example for Analyzing the Meaning of Response Latencies in a Personality Questionnaire. *Journal of Applied Measurement*. 7, 225-237.

**2004**

Wagner-Menghin, M. M. (2004). Content validity of an objective personality test for the assessment of achievement motive. *Psychology Science*. 46, 259-280.

**2004**

Wagner-Menghin, M. M. (2004). Der Lexikon-Wissen-Test (LEWITE). Computergestützte Testvorgabe und Auswertung. [The LEWITE-Test. Computerized Test Administration and Scoring]. In: Wiener Testsystem [Vienna Test System]. Mödling (Austria): Dr. G. Schuhfried.

**Submitted 2010**

Fill-Giordano, R., Wagner-Menghin, M., & Litzenberger, M. (submitted). Assessment of learning behavior and styles: Comparing direct, questionnaire based measures with indirect measures based on a dynamic approach.

Wagner-Menghin, M., Preusche, I., & Schmidts, M. (submitted). Clinical Performance Assessment with Five Stations: Can it Work?

Wagner-Menghin, M., Preusche, I., & Schmidts, M. (submitted). Studying Effects of Item-Reuse using a Probabilistic Psychometric Framework. Preusche, I., Wagner-Menghin, M., & Schmidts, M. (submitted). Twelve tips for implementing a structured rater training in OSCEs.

**Conference Presentations (2010 for others see CV)**

International

**2010**

Wagner-Menghin, M., Preusche, I., & Schmidts, M. (2010, May). SCAss-Standardized Clinical Skills Assessment: A practical exam for a cohort of more than 700 2nd year medical students. Paper presented at the 14th Ottawa Conference.

Preusche, I., Wagner-Menghin, M., & Schmidts, M. (2010, May). Turn rehearsal into show: SP-resource management is beneficial for large cohort teaching and assessment. Paper presented at the 14th Ottawa Conference

National, Regional

**2010**

Wagner-Menghin, M., Preusche, I., & Schmidts, M. (2010, April). 5-Station Practical Assessment: Can it work? Paper presented at the 14th Grazer Konferenz Qualität der Lehre: New Horizons in Teaching and Learning.

Hofmeister, R., Moritz, T., Hirsch, A., Wagner-Menghin, M., & Pokieser, P. (2010, June). Wie lernen Radiologen? Auswertung einer Umfrage vom ECR 2010. Paper presented at the KIS-RIS-PACS-Tagung/DICOM-Treffen.

Preusche, I., Wagner-Menghin, M., & Schmidts, M. (2010, April). To kill two birds with one stone: Assets and drawbacks of a synergy approach. Paper presented at the 14<sup>th</sup> Grazer Konferenz Qualität der Lehre: New Horizons in Teaching and Learning.

## 2f. Setting within research group

*I am not sure if I understood this headings task. Focusing on the suggested "relevant research, proposal part of a research program" I would simply answer "not available ».*

*After reading the provided sample proposals I got the impression that "Setting within the Research Groups" means to specify how my proposed project is of interest for the SHE's researchers, and I would answer as follows:*

The research program of the SHE focus on the main themes: 'Learning and Innovative Learning Environments' and 'Assessment and Evaluation'. As reflection is said to be crucial for learning and development my proposed research project fits well in SHE's research interests.

## 2g. Expected scientific output and dissemination of results

The expected scientific output is to provide guidance for educators which of the reflection activities increase the ability to identify strengths and weaknesses and may thus be worth implementing in communication skills training. Also provided should be guidance how to evaluate the implemented didactic elements.

Another scientific output is the advancing of the understanding about the metacognitive and metastrategic knowledge undergraduate learners of communication skills process during metacognitive activities. This includes empirical evidence regarding the incremental influence of quality and quantity of self-reflection on communication skills in the prediction of accuracy of self-judgment of communication performance.

Besides a scoring rubric to score quality and quantity of self-reflection during or after communicating with patients using verbal expressions of metacognitive activities it is also expected to provide a preliminary version of a self-rating questionnaire on metacognitive activities during or after communicating with patients.

### Dissemination of results:

The strategy to submit manuscripts targets primarily internal journals in the field of Medical Education (e.g. Medical Education, Medical Teacher, Teaching and Learning in Medicine, Advances in Health Science Education, Patient Education and counselling, as well as local German journals in the field of Education and Medical Education (like Zeitschrift für Hochschuldidaktik, GMA Zeitschrift für Medizinische Ausbildung). The topic of the planned studies is also suitable to target at international journals in field adjacent to medical education (e.g. "Diagnostica"; other suggestions are welcome). Abstracts for presentations will be submitted to international Conferences as AMEE, Ottawa Conference, as well as to national conferences like *Grazer Konferenz zur Qualität in der Lehre*.

## 2h. Societal and scientific relevance (if applicable)

How can results be applied in other research areas? How can results be applied in society, business, etc.? The practical societal significant is given, because communicating with patients as well as identifying strengths and weaknesses in communicating behaviour is a key competency of doctors. In the long term this will contribute to the theoretically sound design of educational interventions using self-reflection.

### Support need

*If statistical or methodological support is needed, the PhD candidate should specify this in the research proposal and pay separately for the extra support that is needed. The same holds for editing or improving the English language of papers.* I am currently no longer sure where and how I will need further support. If it is considered necessary, I appreciate support in methodological questions. As English is not my native language I will need support in editing and improving English language.

## Signature

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**Name:** Wagner-Menghin Michaela

**Place:** Vienna

**Date:** 22.Dec.2011

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School of  
Health Professions  
Education

**SHE PhD Project Proposal**