



## Teaching Osteopathic Diagnostics

*« Estimate the feasibility and the acceptability of an OSCE (Objective Structured Clinical Examination) intended for the students in osteopathy »*

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Garnier Franck Ostéopathe D.O. Msc, Strasbourg, France

# Presentation

Osteopath in a  
medical sport



Osteopath coordinator and  
teacher at Strasbourg's  
Osteopathy College



Collège Ostéopathique  
Strasbourg Europe



PhD student in  
educational sciences at  
the University of  
Strasbourg

UNIVERSITÉ DE STRASBOURG



# Plan

- 1. Story, Definition and goal of OSCE
- 2. OSCE's Structure
- 3. Presentation of a typical OSCE (15 min)
- 4. Construction and planning of a OSCE
- 5. The interest of an OSCE in osteopathy
- 6. Strengths and limits
- 7. Bibliography

# History

- This type of exam was used in 1975 in medical schools
- **The OSCE** would have been initiated in Scotland (Rentscheler, Eaton, Cappiello, McNally & McWilliam , 2007)
- During the years 1990-95, beginning of OSCE in nurse sciences and in health sciences programs (Rusthford, 2007)

# Definition

- **OSCE: Objective Structured Clinical Exam**

- A concise definition:

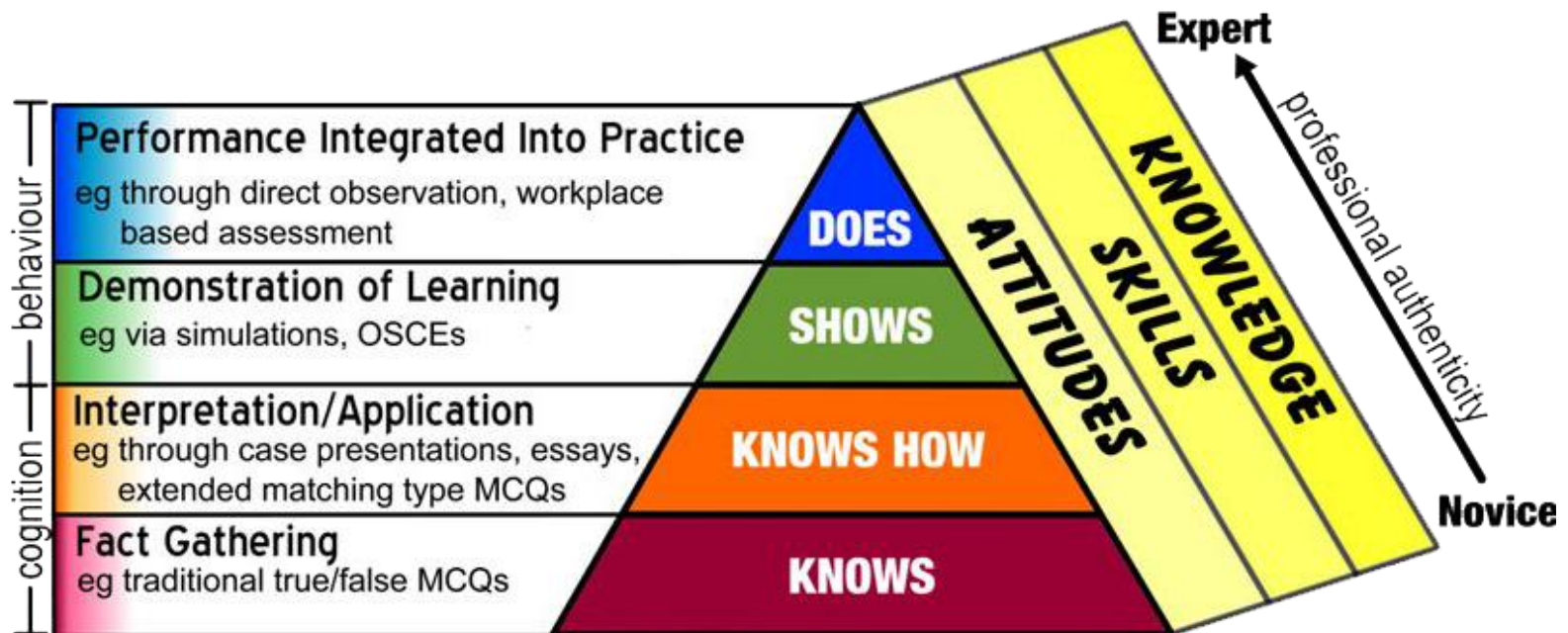
“A test where the student shows his competences in various simulated situations”

- (Free translation of Watson et al., 2002 quoted in Rushforth, 2006, p.482)

# Miller's Pyramid

## MILLER'S PRISM OF CLINICAL COMPETENCE (aka Miller's Pyramid)

it is only in the "does" triangle that the doctor truly performs

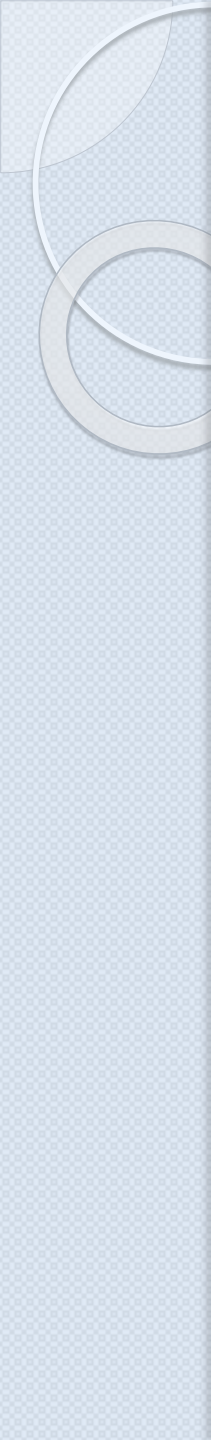


Based on work by Miller GE, *The Assessment of Clinical Skills/Competence/Performance*; *Acad. Med.* 1990; 65(9); 63-67  
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)

# The simulation's inherent goal

- Help the student to develop a feeling of self-confidence
  - ***Brandura's "self-efficacy" concept***
- Quantitative research demonstrated the positive correlation between the clinical simulation and the self-efficacy concept

(Chan and al., 2005; Ammentrop et al., 2007; Jarzemyk & McGrath, 2008; Lauder and al. 2008a in Pike & O'Donnell, 2010)

- 
- Qualitative study about the student's perception of the proper competence in the real environment (Pike & O'Donnell, 2010)
  - Challenge of the simulated situation = creation of a simulated exam environment most faithful to the situation
  - Definition of a simulated exam environment or summative evaluation . The goal (...) is to create an equivalent activity for all the participants in order to test the knowledges, the competences and the clinical abilities in the simulated environment.



# Original OSCE 's structure

- During the year 1975 the objective was to evaluate doctor's various clinical abilities
- Evaluation based on an evaluation grid  
Each ability was evaluated in a different station
- Examples:
  - » Arterial blood pressure
  - » Urine analysis
  - » Drugs administration
- A serie of stations is called a circuit  
(Harden & Gleeson, 1979 quoted in Jones, Pegram & Fordham-Clarke, 2010)

# Original model

- Series of 16 to 20 stations, each one lasting 5 minutes
- The academic interest : Clinical abilities evaluation (Harden and al., 1975 quoted in Mitchell and al., 2009, p. 400)
- Studies let us verify that the OSCE in their original form are more reliable and valid than the more traditional clinical evaluation manners (oral evaluation, study of an exhaustive case)

(Mitchell and al., 2009, p.400; Rushforth, 2007; Rentscheler, Eaton, Cappiello, McNally & McWilliam, 2007 )



## 1ère journée d'examen

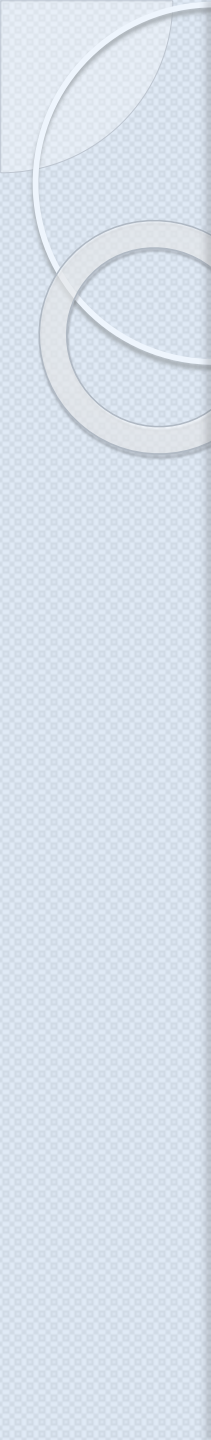
### Exemple de répartition des étudiants pour un OSCE

Heure de passage des étudiants ••••••••	Station 1 - 30 min - ex. enseignem ent PS	Station 2 30 min. - anamnèse et démarche de soins	Station 3 - 30 min. - clinical assessment - statut mental	Station 4 - 30 min - ex. enseignem ent PS	Station 5 30 min. - anamnèse et démarche de soins	Station 6 - 30 min. - clinical assessment - statut mental	Station 7 10 min. technique soins prise de sang	Station 8 10 min. évaluation des douleurs	Station 9 10 min. Clinical assessment statut peau	Station 10 10 min. - technique soin PVC	Station 11 - 10 min prise de décisions cas soin dom.	Station 12 - 10 min décompens ation schizophré nie
08h00							étudiant 7	étudiant 8	étudiant 9	étudiant 10	étudiant 11	étudiant 12
08h10	étudiant 1	étudiant 2	étudiant 3	étudiant 4	étudiant 5	étudiant 6	étudiant 12	étudiant 7	étudiant 8	étudiant 9	étudiant 10	étudiant 11
08h20							étudiant 11	étudiant 12	étudiant 7	étudiant 8	étudiant 9	étudiant 10
08h30							étudiant 10	étudiant 11	étudiant 12	étudiant 7	étudiant 8	étudiant 9
08h40	étudiant 4	étudiant 5	étudiant 6	étudiant 1	étudiant 2	étudiant 3	étudiant 9	étudiant 10	étudiant 11	étudiant 12	étudiant 7	étudiant 8
08h50							étudiant 8	étudiant 9	étudiant 10	étudiant 11	étudiant 12	étudiant 7
09h00							étudiant 1	étudiant 2	étudiant 3	étudiant 4	étudiant 5	étudiant 6
09h10	étudiant 7	étudiant 8	étudiant 9	étudiant 10	étudiant 11	étudiant 12	étudiant 6	étudiant 1	étudiant 2	étudiant 3	étudiant 4	étudiant 5
09h20							étudiant 5	étudiant 6	étudiant 1	étudiant 2	étudiant 3	étudiant 4
09h30							étudiant 4	étudiant 5	étudiant 6	étudiant 1	étudiant 2	étudiant 3
09h40	étudiant 10	étudiant 11	étudiant 12	étudiant 7	étudiant 8	étudiant 9	étudiant 3	étudiant 4	étudiant 5	étudiant 6	étudiant 1	étudiant 2
09h50							étudiant 2	étudiant 3	étudiant 4	étudiant 5	étudiant 6	étudiant 1
10h00							étudiant 19	étudiant 20	étudiant 21	étudiant 22	étudiant 23	étudiant 24
10h10	étudiant 13	étudiant 14	étudiant 15	étudiant 16	étudiant 17	étudiant 18	étudiant 24	étudiant 19	étudiant 20	étudiant 21	étudiant 22	étudiant 23
10h20							étudiant 23	étudiant 24	étudiant 19	étudiant 20	étudiant 21	étudiant 22
10h30							étudiant 22	étudiant 23	étudiant 24	étudiant 19	étudiant 20	étudiant 21
10h40	étudiant 16	étudiant 17	étudiant 18	étudiant 13	étudiant 14	étudiant 15	étudiant 21	étudiant 22	étudiant 23	étudiant 24	étudiant 19	étudiant 20
10h50							étudiant 20	étudiant 21	étudiant 22	étudiant 23	étudiant 24	étudiant 19
11h00							étudiant 13	étudiant 14	étudiant 15	étudiant 16	étudiant 17	étudiant 18
11h10	étudiant 19	étudiant 20	étudiant 21	étudiant 22	étudiant 23	étudiant 24	étudiant 18	étudiant 13	étudiant 14	étudiant 15	étudiant 16	étudiant 17
11h20							étudiant 17	étudiant 18	étudiant 13	étudiant 14	étudiant 15	étudiant 16
11h30							étudiant 16	étudiant 17	étudiant 18	étudiant 13	étudiant 14	étudiant 15
11h40	étudiant 22	étudiant 23	étudiant 24	étudiant 19	étudiant 20	étudiant 21	étudiant 15	étudiant 16	étudiant 17	étudiant 18	étudiant 13	étudiant 14
11h50							étudiant 14	étudiant 15	étudiant 16	étudiant 17	étudiant 18	étudiant 13
Pause de midi												
13h00							étudiant 31	étudiant 32	étudiant 33	étudiant 34	étudiant 35	étudiant 36
13h10	étudiant 25	étudiant 26	étudiant 27	étudiant 28	étudiant 29	étudiant 30	étudiant 36	étudiant 31	étudiant 32	étudiant 33	étudiant 34	étudiant 35
13h20							étudiant 35	étudiant 36	étudiant 31	étudiant 32	étudiant 33	étudiant 34
13h30							étudiant 34	étudiant 35	étudiant 36	étudiant 31	étudiant 32	étudiant 33
13h40	étudiant 28	étudiant 29	étudiant 30	étudiant 25	étudiant 26	étudiant 27	étudiant 33	étudiant 34	étudiant 35	étudiant 36	étudiant 31	étudiant 32
13h50							étudiant 32	étudiant 33	étudiant 34	étudiant 35	étudiant 36	étudiant 31
14h00							étudiant 25	étudiant 26	étudiant 27	étudiant 28	étudiant 29	étudiant 30
14h10	étudiant 31	étudiant 32	étudiant 33	étudiant 34	étudiant 35	étudiant 36	étudiant 30	étudiant 25	étudiant 26	étudiant 27	étudiant 28	étudiant 29
14h20							étudiant 29	étudiant 30	étudiant 25	étudiant 26	étudiant 27	étudiant 28
14h30							étudiant 28	étudiant 29	étudiant 30	étudiant 25	étudiant 26	étudiant 27
14h40	étudiant 34	étudiant 35	étudiant 36	étudiant 31	étudiant 32	étudiant 33	étudiant 27	étudiant 28	étudiant 29	étudiant 30	étudiant 25	étudiant 26
14h50							étudiant 26	étudiant 27	étudiant 28	étudiant 29	étudiant 30	étudiant 25
15h00							étudiant 43	étudiant 44	étudiant 45	étudiant 46	étudiant 47	étudiant 48
15h10	étudiant 37	étudiant 38	étudiant 39	étudiant 40	étudiant 41	étudiant 42	étudiant 48	étudiant 43	étudiant 44	étudiant 45	étudiant 46	étudiant 47
15h20							étudiant 47	étudiant 48	étudiant 43	étudiant 44	étudiant 45	étudiant 46
15h30							étudiant 46	étudiant 47	étudiant 48	étudiant 43	étudiant 44	étudiant 45
15h40	étudiant 40	étudiant 41	étudiant 42	étudiant 37	étudiant 38	étudiant 39	étudiant 45	étudiant 46	étudiant 47	étudiant 48	étudiant 43	étudiant 44
15h50							étudiant 44	étudiant 45	étudiant 46	étudiant 47	étudiant 48	étudiant 43
16h00							étudiant 37	étudiant 38	étudiant 39	étudiant 40	étudiant 41	étudiant 42
16h10	étudiant 43	étudiant 44	étudiant 45	étudiant 46	étudiant 47	étudiant 48	étudiant 42	étudiant 37	étudiant 38	étudiant 39	étudiant 40	étudiant 41
16h20							étudiant 41	étudiant 42	étudiant 37	étudiant 38	étudiant 39	étudiant 40
16h30							étudiant 40	étudiant 41	étudiant 42	étudiant 37	étudiant 38	étudiant 39
16h40	étudiant 46	étudiant 47	étudiant 48	étudiant 43	étudiant 44	étudiant 45	étudiant 39	étudiant 40	étudiant 41	étudiant 42	étudiant 37	étudiant 38
16h50							étudiant 38	étudiant 39	étudiant 40	étudiant 41	étudiant 42	étudiant 37

# Construction of an OSCE

Choice of the competence to evaluate  
Choice of the clinical situation  
Scenario writing  
Role-playing  
Instructions to the student  
Instructions to the teacher

- Client simulated scenario
- Development of the observation grid
- For the internal validity it is important to develop evaluation criteria linked with the competence to evaluate
  - Example: Is it necessary to evaluate the hand hygiene in an OSCE which goal is help relation
- **Planification of a retroaction period** (Laberge, 2010; Jones, Pegram & Fordham-Clarke, 2010)

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- Definition of Immediate retroaction (**“debriefing”**)
  - The activity that follows the simulation experience and that is directed by the facilitator.
  - The reflexive thinking of the participant is encouraged and the retroaction is given in function of the participant’s performance in the diverse aspects of the evaluation.
  - The participants are encouraged to explore emotions, questions and reflexion and give them a retroaction.
  - The goal of the immediate retroaction period is to be directed to the assimilation of the present situation and the adaptation in order to promote the apprenticeship transfer in future situations.

(INACSL Board of Directors, 2011, p. S5).

# OSCE's interest in osteopathy

- **Identify the situations based on the osteopathy competences referential**
  - Elaborate an osteopathic diagnostic
  - Eliminate the contraindication
  - The illness story
  - The realization of a clinical exam

# Examples of stations proposed to students at Strasbourg's osteopathy school

- **Diagnostic station:** Headache ; thoracic pain ; abdominal pain
- **Clinical exam station:** Shoulder pain
- **Advise stations:** psoas stretching
- **Document redaction station:** write a report to a doctor



## Instructions to the students

- A person comes to consult you for headaches. She comes according to a friend's recommendation. She has some cervical pains and connects her headaches to these cervical problems.



Do the clinical examination of your patient, do you take care of h

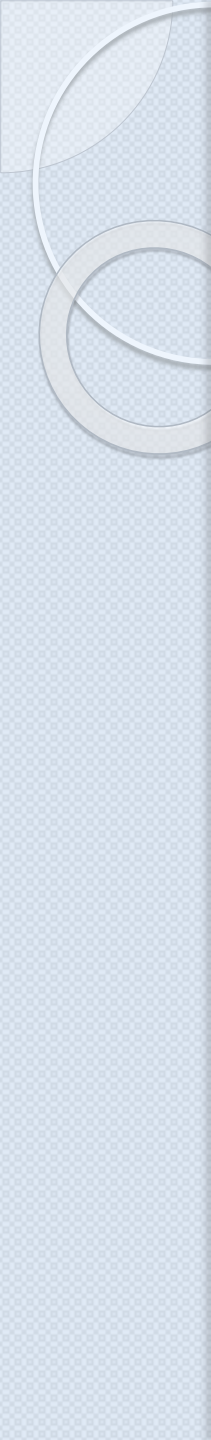
# Instructions to the simulated patients

- Put your head in your hands
- Do little pain groaning
- You can't turn your head to the right
- Your headaches wake you up at night

Traitement des douleurs cancéreuses	Points
<b>1 - Histoire</b>	
• Localisation de la douleur L4-L5	5
• Horaire particulier de la douleur	10
• Évaluation de la douleur : EVA 8 ou plus assez soulagée	5
• Recherche des signes de douleurs neuropathiques ou par excès de nociception	10
• Recherche des signes d'intolérance à la morphine	5
• Recherche des craintes du patient	10
<b>2 - Examen clinique</b>	
• Examen du rachis	5
• Examen neurologique des membres inférieurs	10
<b>3 - Hypothèses diagnostiques</b>	
• Exacerbation d'une pathologie douloureuse métastatique osseuse	10
<b>4 - Examens complémentaires de première intention</b>	
• Aucun	5
<b>5 - Conseils</b>	
• Repos	5
• Règles hygiéno-diététiques de prévention des effets indésirables de la morphine : laxatifs, antiémétiques, etc.	5
• Expliquer le traitement et rassurer sur le traitement morphinique	5
<b>6 - Traitement</b>	
• Inter doses de morphine immédiate 10 mg toutes les 2 à 4 heures en fonction de l'EVA, puis si nécessaire augmenter la morphine LP	10
<b>Total sur 100</b>	

# Student's feedback about this exam

- 5th year osteopathy students:
  - “a very realistic exam”
  - “ I really had the impression to be evaluated on my professional competence”
  - “stressful exam because there is more variety”
  - “This exam is very real, I had the impression to really be in a consulting. I think that I could do much better in a consulting room the different station's situations I encountered. “

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- The most objective form that exists for the practice evaluation
  - It measures what the student can or can't do
  - Is perceived by the students and the evaluators as a valid and reliable method ( cf. apprenticeship's motivation)
  - The evaluation grid reduces measurement errors
  - An evaluation that adapts easily to the complexity and variety of complex clinical situations

# Human limits

## ➤ Students

- Student's stress that can affect the performance
- The student is not involved in a self-evaluation process

## ➤ Teachers

- Is heavier to realise than a traditional exam
- Needs a lot of time and people !

# Conclusion

- **Programs should not evaluate only with OSCE**, plurality of the evaluation methods is recommended
- The OSCE is a **effective and sensible** method to evaluate in a reliable way and validate the student's competences based on their original model
- Osteopathy knowledge's complexity makes the creation of evaluation based on OSCE very **pertinent**
- This adapted method has to be investigated in terms of validity and reliability to measure the complexity of the competence in the osteopathic context, especially in the context of an advanced practice.

# References

- Bartley, W., Rombough, R., Howse, E. & Leblanc, R. (2004). The OSCE approach in nursing education. *Canadian Nurse*, 100(3), 18-23.
- Benner, P. (1995). *De novice à expert – Excellence en soins infirmiers*. St- Laurent: Éditions du Renouveau Pédagogique [ERPI].
- International Nursing Association for Clinical Simulation and Learning (INACSL) Board of Directors (2011, August). Standard I: Terminology in Standards of Best Practice : Simulation, *Clinical Simulation in Nursing*, 7(4S), S1-S19. doi: 10.1016/j.ecns.2001.05.005
- Hall, P., Marshall, D., Weaver, L., Boyle, A., & Taniguchi, A. (2011). A Method to Enhance Student Teams in Palliative Care: Piloting the McMaster-Ottawa Team Observed Structured Clinical Encounter. *Journal of Palliative Medicine*, 14(6), 744-750. doi: 10.1089/jpm.2010.0295
- Jones, A., Pegram, A., & Fordham-Clarke, C. (2010). Developing and examining an Objective Structured Clinical Examination. *Nurse Education Today*, 30(2), 137-141.
- doi: 10.1016/j.nedt.2009.06.014
- Laberge, L. (2010). La rédaction d'un examen écrit selon le cadre de référence de l'OIIQ, une compétence à développer chez les enseignants. Communication faite le 7 juin 2010 dans le cadre du congrès de l'Association des enseignantes et enseignants en soins infirmiers des collèges du Québec [AEESICQ]. Récupéré le 10 novembre 2011 sur [http://www.aeesicq.org/pdf/B5\\_2010.pdf](http://www.aeesicq.org/pdf/B5_2010.pdf)
- McWilliam, P., & Botwinski, C. (2010). Developing a successful nursing objective structured clinical examination. *Journal of Nursing Education*, 49(1), 36-41. doi: 10.3928/01484834-20090915-01



# References

- Mitchell, M. L., Henderson, A., Groves, M., Dalton, M., & Nulty, D. (2009). The objective structured clinical examination (OSCE): Optimising its value in the undergraduate nursing curriculum. *Nurse Education Today*, 29(4), 398-404. doi: 10.1016/j.nedt.2008.10.007
- Ordre des infirmières et infirmiers du Québec (OIIQ). (2010). Guide de préparation à l'examen professionnel de l'OIIQ. Westmount: Auteur. 520 pages.
- Pike, T., & O'Donnell, V. (2010). The impact of clinical simulation on learner self-efficacy in pre- registration nursing education. *Nurse Education Today*, 30(5), 405-410.
- Potter, A.P. & Perry, A.G. (2010). Soins infirmiers: fondements généraux. Tome 1 et 2 (Édition française: Le May, S., Dallaire, C. & Brassard, Y.). Montréal: Chenelière Éducation.
- Rentschler, D. D., Eaton, J., Cappiello, J., McNally, S. F., & McWilliam, P. (2007). Evaluation of undergraduate students using objective structured clinical evaluation. *Journal of Nursing Education*, 46(3), 135-139.
- Rushforth, H. E. (2007). Objective structured clinical examination (OSCE): review of literature and implications for nursing education. *Nurse Education Today*, 27(5), 481-490.
- Walsh, M., Bailey, P. H., & Koren, I. (2009). Objective structured clinical evaluation of clinical competence: an integrative review. *Journal of Advanced Nursing*, 65(8), 1584-1595.



**Thank you for your attention !**

**Contact :**

**[Franck.garnier4@orange.fr](mailto:Franck.garnier4@orange.fr)**