Journal Article: Reviewers' Comments to Author:

Reviewer: 1
Comments to the Author
We are delighted to see our original concept being developed and used in this way - this is an excellent piece of work and we believe the paper should be published with very minor corrections.

Reviewer: 2
Comments to the Author
Due to increasing numbers of students in Natural Sciences, teaching undergraduate courses is becoming increasingly challenging. The lack of suitable equipment is one of the major concerns. This results in students not getting hands-on laboratory experience. This impacted on the quality of graduates being delivered by universities; often not fulfilling requirements of industry who is employing these graduates. Although Universities aim to be recognised as research Universities, good quality undergraduate teaching is again being strived for and a huge effort is being made by universities to ensure creative teaching. The development of the SpecUP is a creative concept and will impact not only within the University where it has been designed, but also other Universities. It is important that this initiative is given the exposure it deserves and one way of doing so is by publishing this manuscript in a local peer-reviewed journal. The paper is well written and clearly describes the uses and benefits of the developed instrument adequately, suitable complemented with clear figures. I, however, foresee that this manuscript will also be viewed by many a international scientist. I suggest this manuscript be published as is and I congratulate the authors on this timely initiative.

Comments from participants of the SpecUP workshops:

"It was an honor meeting and working with you ! Hope to see you in Tunisia very soon. Wish all the best on behalf of all my classmates from ESPRIT prépa ! Thank you" Ines SmaOùi, Tunisia

Dear Patricia,
Congratulations!
This is a step in the right direction.
I hope as a group we will another paper, geared towards a further development of the Specup spectrophotometer.
My students really appreciated the SpecUp instrument. They were glad with the practicability of it.
I have done the first round of filling the Questionaires with a group of twenty third year students.
I am targeting another group of 30 students currently on holiday.
Please Patricia, I have not gotten my certificate and the power point presentation from you and the African laser center CEO. I will be grateful to get them.
Thanks
Aloys Mosima Osano
Lecturer (Analytical Chemistry)
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Email: aloysosano@yahoo.com
Dear Dr. Forbes,

Thank you for your email. Congratulations on your achievement. I wish you all the best. I am planning to implement the SpecUp with my third and fourth years from next August. This is when our academic year begins.

Kind regards,
Ntai Khoabane, University of Lesotho

Dear All

Thank you for making the two days such fun. It was great being in such a close group, and learning from each other's experiences.

We'll all be looking forward to the progress being made during the next few months.

I hope the students enjoy the SpecUP as much as we did. All the best for next year.

Kind regards
Merrill Wicht
CPUT

Hi there!

This was indeed an opportunity to broaden our horizons and see different options available to us to advance chemical education. We should keep this network alive and maybe even improve it by constantly being in touch with one another and share ideas.

Ntai Khoabane
University of Lesotho

Hi to all,
It was nice meeting all of you at the SpecUP workshop. I believe we are determine to make the SpecUP work and the concepts of spectrophotometry to be understood and appreciated by our students. Let us continue updating ourselves and share out knowledge that comes across us for the advancement of humanity in the field of analytical chemistry.

Kind regards
Simion Misoi
Egerton University, Kenya
Dear Patricia,

It is yet another beautiful morning in Africa that i want to thank you and your entire team for giving us the opportunity to participate and share in the SpecUp workshop. Our endeavor is to make the implementation process successful which will be a plus to Africa in terms of knowledge dissemination. Time was somehow short to draw up or develop a common manual for the spec from the workshop, but all in all the objectives were achieved and each of us who attended can make an SOP for the spec. Otherwise i reached home safely around 10 pm and am personally thankful for everything. God bless you

Kind regards

Simion

Dear Patricia,

Congratulations. The ALC appreciates the good work that you are doing and we look forward to supporting your efforts in building photonics skills in partnership with us.

Regards,

Paul

Dr Paul Motalane
Manager: HEI Unit
CSIR National Laser Centre

Dear Patricia

Thank you very much for your prompt response to my request.

My presentation went very well and my colleagues are very interested and appreciated the fact I was able to attend the workshop. The graph showed the level of comparison of results from specUP and the commercial version, which played a key role in securing their interest. In the coming weeks, I am going to run a set of experiments using specUP and our commercial spectrophotometer.

My Dean has given me a task to secure another twenty (20) set of specUP by June next year when our pharmaceutical analysis course will be running. I know this is a tall order but kindly take note of our request. At the appropriate time please send to me the order forms and the method of payment.

Kind regards

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Comments arising from the ETOP presentation:

Dear Dr. Patricia Forbes,

I write to you as a follow up of your presentation at ETOP in Porto about the spectrophotometer you devised and proposed at very low cost. Although unfortunately I didn't attend the session (I was in a parallel workshop) I'm quite interesting in receiving more infos about it or even buy one for my school.

Just to remind you of our brief meeting: I'm a physics teacher at high school in Italy and a teacher trainer (about nanotech at high school in collaboration with the university of Modena and Reggio Eemilia) We talked shortly during one of the lunches.

You gave me your card and even ventilated the possibility to have the spectrophotometer brought over as you came to conf here in Europe to save on shipping. I would be really interested to pursue the possibility further and use the tool with my students and show it to my colleagues.

Looking forward to your answer.

Kind regards, Annamaria Lisotti

SpecUP questionnaire graphical summaries:

Figure 1: Response of students to questions prior to using the SpecUP
Q5: Have you ever used a commercial spectrophotometer?
Q6: Have you ever used the SpecUP spectrophotometer?
Q7: Have you been taught the theoretical aspects of spectrophotometry in lectures?

Figure 2: Response of students to questions after using the SpecUP
Q2: The SpecUP helped me to understand spectrophotometry.
Q3: I enjoyed moving the components of the SpecUP to see the effect it had on the results.
Q5: The SpecUP made me think about how a spectrophotometer works.