Pilot study of Biochemistry education and career development

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Abstract:

This pilot study focused on career development among students. We conducted a survey for three groups: Secondary School students (α) studying general biochemistry; University Students studying clinical biochemistry (β) and exercise biochemistry (γ). The students were asked if they knew their own career preferences; α rated 6.64±0.77, β and γ rated 6.83±0.53 and 6.18±0.71, respectively. For the nature of their preferred jobs based on Holland Codes, most α (64.3%) preferred 'investigative'. While most β (66.7%) preferred 'conventional' and most γ (63.6%) preferred 'social'. The Holland Codes of α, β, and γ were found to be 'IRC', 'CIR', and 'SR', respectively; all groups shared 'realistic' as the common component, implicating the interest in conducting experiments. Considering the satisfaction of their resume, the ratings of α, β, and γ were 5.29±0.51, 4.56±0.39, and 5.18±0.53, respectively. For interview skills, their ratings were 4.43±0.76, 5.33±0.41, and 5.82±0.74, respectively. Regarding their confidence in career development, the ratings were 6.00±0.49, 4.94±0.45, and 4.73±0.64, respectively. Taken together, about two-third of the students knew their own career preferences, which appeared to be associated to the courses they took. Overall, the University students appeared to be less satisfied with and less confident in their career development. It is suggested that in the curriculum of Biochemistry, some components related to career development of the students should be incorporated.

Methodology:

Three batches of students studying Biochemistry were surveyed in 2021: I) Secondary School students studying general biochemistry (α; n=14); University Students studying clinical biochemistry (β; n=18) and exercise biochemistry (γ; n=11). They were asked to rate 1) the knowledge of career preference, 2) CV, 3) interview skills, 4) confidence in career planning and development; they were also asked to select their preferred job nature based on *Holland Code*. The findings were then analyzed and compared with the data obtained in previous studies.

Table 1. Findings of previous studies regarding the percentage distribution of the most and least satisfied categories under the old education system (OES) and the new education system (NES) among general university students. Δ : difference between NES and OES. (Lo F.H. 2020)

Item categories	% of scale 1-3			% of scale 8-10		
	OES	NES	Δ	OES	NES	Δ
Generic skill and ability	4.88	8.47	3.60	7.79	0.00	**-7.79**
Career	19.51	6.78	**-12.73**	6.49	6.98	0.48
Education and qualification	12.20	8.47	-3.72	3.90	4.65	0.76
Personal values	4.88	5.08	0.21	23.38	11.63	**-11.75**
Physical health	2.44	13.56	**11.12**	11.69	9.30	-2.39
Society and politics	4.88	15.25	**10.38**	1.30	4.65	3.35
Relationship	21.95	3.39	**-18.56**	28.57	28.60	**-9.97**
Hobby, leisure and activities	13.20	8.47	-3.72	10.39	32.56	**22.17**
Living standard	17.07	28.81	**11.74**	6.49	11.63	**5.13**
Others, eg luck	0.00	1.69	1.69	0.00	0.00	0.00

Satisfaction of '**Career**' was not as poor; whereas that of '**Hobby, leisure and activities**' improved. However, satisfaction of '**Physical health**' and '**Society and politics**' got worse; while that of '**Generic skill and ability**' and '**Personal values**' dropped. Moreover, the satisfaction of '**Relationship**' and '**Living standard**' became polarized.

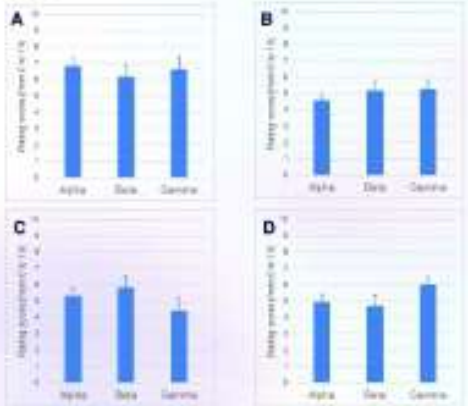

Figure 1. Rating score of the three groups of students: Secondary School students (α) studying general biochemistry; University Students studying clinical biochemistry (β) and exercise biochemistry (γ). (A) knowledge of career preference; (B) Satisfaction of CV; (C) satisfaction of interview skills; (D) confidence in career planning and development.

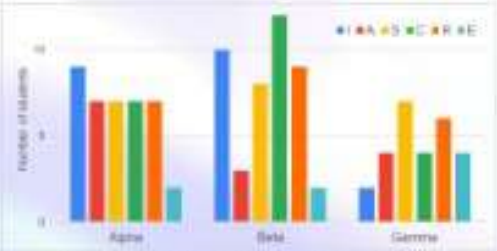

Figure 2. Career preferences of students: Secondary School students (α) studying general biochemistry; University Students studying clinical biochemistry (β) and exercise biochemistry (γ).

Future Perspectives:

Our previous findings suggested that students from the New Education System in Hong Kong had improved satisfaction of their career. In this pilot study, we continued to study Biochemistry and career development; the preliminary results revealed some areas of focus, such as career preferences, CV and interview preparation. More students will be surveyed in the near future to make some more insightful conclusions.

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