Original Research Article

Psychosocial Characteristics, Training Attitudes and Well-being of Students: A Longitudinal Study

ABSTRACT

Background: The first aim of this study was to investigate the influence of psychosocial characteristics on four training attitudes (motivation to learn, learning, transfer intention and cognitive dissonance) and well-being. The second — and main — aim was to examine the impact of attitudes to training on individual levels of well-being.
Methodology: This study used a longitudinal approach comprising two phases of data collection. One-hundred and eighty first-year psychology students participated in Phase 1, and 95 students participated in both phases. The participants were required to complete a survey measuring various psychosocial characteristics (coping, personality, work characteristics, organisational citizenship behaviour [OCB] and commitment), four training attitudes and positive and negative well-being.
Results: The results showed that specific psychosocial characteristics, particularly the positive variables (positive coping, positive work characteristics, OCB, and commitment) had significant correlations with positive training attitudes (motivation to learn, learning, and transfer intention). In addition, motivation to learn, learning, and transfer intention had a significant positive correlation with positive well-being, while cognitive dissonance had a significant negative correlation with positive well-being. However, these relationships were no longer significant when other variables were included. Furthermore, it was revealed that personality and commitment were the stronger predictors for well-being. Possible explanations for these findings are discussed.
Conclusions: This study contributes to the existing body of knowledge, but more research is required to confirm the relationships between attitudes to training and well-being. Future research could also examine these relationships in more detail, especially in the context of specific training programmes.

Keywords: Cognitive dissonance, learning, transfer intention, motivation to learn, psychosocial characteristics, well-being

1. INTRODUCTION

There is documented evidence that training and development bring many benefits, not only to organisations — including factors related to organisational performance, such as increased profits and sales, customer satisfaction and organisational reputation — but also with respect to having a positive impact on the individual [1]. Positive changes, such as the acquisition of new skills and the improvement in work performance [2], along with improving declarative knowledge, not only for the self but also within a team, are examples of outcomes from training activities.

Although there is much evidence demonstrating that training activities promote positive changes, few studies have examined the influence of training programmes on individual levels of well-being, particularly where the training programmes focus on improving job-related skills. There has been a substantial amount of research that has examined the effects of training programmes on well-being which have focused on specific types of training programmes that were intended to help trainees or individuals increase their positive well-being (e.g. happiness, life satisfaction) and decrease their negative well-being (e.g. stress, anxiety, depression). Intervention programmes, such as those associated with stress management [3, 4], resilience [5, 6], mindfulness [7, 8] and cognitive behaviour therapy [9] have been proven to facilitate an increase in the level of well-being in individuals.

Rather than focusing on the direct effect of training programmes on individual well-being, this study examined the influence of training attitudes on well-being. Four training attitudes were chosen — namely, motivation to learn, learning, transfer intention and cognitive dissonance — which have been found to be appropriate factors for predicting training effectiveness and transfer of training. Noe [10] defined motivation to learn as a specific desire shown by an individual to discover the content of the training programme, while learning is a process of obtaining new or altering existing knowledge, skills or attitudes [11]. Transfer intention originated from the implementation intentions proposed by Gollwitzer [12], which emphasise the if-then plan to successfully achieve one's goal (e.g. 'If I encounter situation X, then I will perform response Y'). It was said that trainees who have high motivation to learn and have learned a lot after attending training have a high probability of transferring the newly acquired knowledge and skills to the work setting [10, 13]. Similarly, those who have a high intention to implement new knowledge and skills have a higher probability of transferring the actual knowledge and skills to their daily job [14, 15].

As for cognitive dissonance, research on this variable, in a training research context, is still relatively limited. Cognitive dissonance is an unpleasant state of emotion that results from having two or more cognitions or beliefs that are contradictory to each other, leading to cognition alteration [16]. Weisweiler and colleagues [17] have suggested that individuals may fail to transfer new knowledge and skills because they have encountered cognitive dissonance due to the new knowledge contradicting their prior experience. More research is required to explore the effects of cognitive dissonance on training effectiveness.

Several studies have examined the influence of these four training attitudes on well-being separately. Past research has shown that individuals with high motivation to learn new knowledge and skills experience an increased level of well-being [18, 19] and a better quality of life [20]. Meanwhile, those who face demotivation, or who are unmotivated, are more prone to encounter anxiety and depression [21]. In addition, individuals who learn new knowledge and skills in a training programme not only feel happier and have better well-being, but they also experience greater life satisfaction [22, 23] and increased self-confidence [24]. Learning, either formally or informally, can produce intrinsic enjoyment [25], increase positive feelings and make a trainee feel more empowered [22], hence facilitating an increased level of well-being.

With regard to the influence of transfer intention on well-being, the association between these two variables has been underexplored. Transfer or implementation intention studies, in relation to the psychological aspects, have mostly concentrated on interventions where the researcher has implemented this variable as a behavioural intervention in promoting desirable behaviours. For example, Loft and Cameron [26] applied an implementation intention to improve sleep behaviour, Budden and Sagarin [27] investigated the exercise intention-behaviour relationship, and Hagger [28] used implementation intentions to reduce unhealthy eating, while Grothues and colleagues [29] employed intentional behaviour to

reduce drinking behaviour. Although studies on the relation between transfer/implementation intentions and well-being are limited, some analyses have found that the intention to perform certain types of actions (mainly related to health) correlate positively with the level of well-being of individuals [30] and negatively with stress, anxiety and depression [31]. Similarly, the effects of cognitive dissonance on individual levels of well-being are also underexplored. As proposed by Festinger [16], cognitive dissonance begins when a person encounters cognitions that contradict each other and, as a result, develop an uncomfortable affective state that leads to a specific type of motivation to reduce the inconsistency or dissonance. The limited literature on cognitive dissonance and well-being has revealed that those who encounter cognitive dissonance will experience anxiety [32], emotional exhaustion [33], work strain [34] and low job satisfaction [34]. Zaiedy Nor and Smith [35] explained this association in some detail, in relation to these four training attitudes and well-being.

Zaiedy Nor and Smith [35] also investigated the influence of attitudes to training on individual levels of well-being, finding that all of the training attitudes significantly correlated with positive or negative well-being. Positive training attitudes that consist of motivation to learn, learning and transfer intention have a moderate relationship with positive well-being. This result suggests that those who perceive themselves as having a high motivation to learn the content of training programmes feel that their knowledge and skills have improved after attending the training activities, and they have the intention of implementing the newly acquired knowledge and skills in the work setting, thus scoring high in positive well-being. After controlling for demographics and psychosocial characteristics, however, all three of the positive training attitudes were not significantly associated with positive well-being. On the contrary, cognitive dissonance was found to significantly influence negative well-being in a positive direction, even after controlling for the established variables. This finding suggests that those who experience cognitive inconsistency, which is characterised as having an uncomfortable feeling when wanting to apply new knowledge and skills, or a state of confusion either in applying newly acquired skills or the skills that they used before undertaking the training, experience stress, anxiety and depression. According to Zaiedy Nor and Smith [35], and as proposed by Festinger [16], this phenomenon may be due to the negative affective states that result from the experience of cognitive dissonance that contributes to a high level of negative well-being. This study highlights the link between training effectiveness predictors and individual well-being that has previously been underexplored.

Hence, in this study, it was hypothesised that those who have a high motivation to learn the content of a training programme, who understand the knowledge and skills better than before undertaking the training programme and have the intention to apply the new knowledge and skills to everyday life, will also have a high level of positive well-being. Meanwhile, those who experience cognitive dissonance, or feelings of confusion and discomfort when using new knowledge and skills, will tend to experience negative well-being.

1.1 Predictors of training attitudes

Not only is it essential to examine the effect of training attitudes on well-being, it is also worth investigating the predictors of these four training attitudes to better understand the antecedent of these variables — namely, motivation to learn, learning, transfer intention and cognitive dissonance. To begin, in a transfer of training model that has been proposed by Baldwin and Ford [36], it was stated that learning, which is one of the training outputs, can be influenced by three training inputs — trainee characteristics, training design and the work environment. An individual high in motivation and cognitive ability, along with having a more positive personality, including openness to experience and extroversion, among other

features, will learn and better understand a training programme. Not only that, but Baldwin and Ford [36] also suggested that the work environment, particularly support from supervisors and co-workers, and the opportunity to use newly acquired skills and knowledge, helps to increase learning and retention processes. In addition, Noe [10] found that trainees who score high in job involvement and are proactive in planning their careers are more likely to score higher in learning the content of training programmes.

Next, a meta-analysis performed by Colquitt, LePine and Noe [13] revealed that both individual and situational characteristics could influence motivation to learn. Concerning individual characteristics, it was said that trainees with high internal locus of control, achievement motivation [13] and self-efficacy [37] have a moderate to strong positive relationship with motivation to learn. In addition, personality in terms of extraversion, openness [38] and conscientiousness, as well as being proactive [39, 40], are all significant predictors of motivation to learn. Moreover, a strong to moderate relationship has been found between job involvement [13], organisational commitment [13, 41], career planning and career exploration [13] and motivation to learn. Machin and Treloar [41] added that a feeling of high work locus of control, and trainees who believed that they would derive a significant benefit from training programmes, also have a high level of training motivation. Meanwhile, with regard to situational characteristics, it was revealed that supervisors who support trainees [13, 37, 41], and obtain support from co-workers, along with a positive climate within the organisation [13], help the trainee develop high motivation to learn and transfer the training content.

Similar to motivation to learn, various individual and situational characteristics can also predict transfer intention. Those who possess a high level of self-efficacy and receive supervisor support tend to have increased intention to apply newly acquired knowledge and skills from training programmes to their work setting [37, 42]. Al-Eisa, Furayyan and Alhemoud [37] explained that trainees who are confident in their ability and capability to succeed in a training programme, along with having a high motivation to learn the content of the training, are more likely to have a high transfer intention level and are more committed to instigating the transfer process. Moreover, Machin and Fogarty [42] added that transfer intention has a positive relationship to five domains of transfer climate — namely, goal and social cues, positive and negative reinforcement, and extinction. This transfer climate is one of the potential facilitators of the positive transfer of training into the work setting [43].

The influence of affectivity on both transfer intention and pre-training motivation has also been reported [86]. Employees who attend training with positive affect, where they feel enthusiastic, excited, alert, strong, proud, inspired and determined, will also experience high pre-training motivation, whereby they are eager to take part in the training. Meanwhile, those who frequently encounter negative affect, such as feeling scared, afraid, nervous, irritable, hostile and guilty, tend to have a low intention to transfer new knowledge and skills [86]. Another characteristic that may influence transfer intention is supervisor support. Research has found that supervisor support has the most potent effect on transfer intention compared to self-efficacy and motivation to learn [37]. This result suggests that supervisors who provide a significant level of support to trainees to attend a training programme and who encourage trainees to apply new knowledge and skills in the workplace help the trainee to initiate the transfer.

Regarding cognitive dissonance, most studies have been conducted in the field of social psychology and management research [44]. Cognitive dissonance theory has been widely used to explain organisational behaviour, such as job demands and job satisfaction [45], staffing risks and safe staffing [46] and also consumer behaviour [47]. Some studies that have incorporated this theory have manipulated the situation to create a dissonance

scenario, measuring various outcomes from that [48, 49]. Although cognitive dissonance results in many issues, research into the antecedents of cognitive dissonance is rather limited. To better understand the cause of such dissonance, it is essential to examine the number of psychosocial characteristics that may play a role in determining a high or low level of cognitive dissonance in individuals. Hence, one of the objectives of this study was to identify the predictors of cognitive dissonance.

Following the approach proposed by Colquitt, LePine and Noe [13], which emphasised both individual and situational characteristics, this study investigated various psychosocial characteristics as the predictors of training attitudes. As mentioned previously, personality [51], organisational commitment [13, 41] and affectivity [85] play a role in determining training attitudes. Past research has also found that other work-related variables, such as job involvement [13], supervisor and co-worker support [52, 80], career planning and career exploration [13], can predict one of the training attitudes; however, in this study, slightly different predictors were used. The work characteristics that cover work demand, control and support were used as one of the training attitude predictors. Also, this study investigated the influence of positive personality, positive and negative coping, organisational citizenship behaviour (OCB) and commitment on attitudes toward training.

1.2 Predictors of well-being

Maintaining a high level of well-being is vital in terms of enabling individuals to positively carry out their responsibilities at work and in their daily routines. There are two well-known models of well-being in psychology — subjective and psychological well-being. Subjective well-being can be defined as when one experiences positive affect, an absence of negative affect and pain, and a high level of satisfaction with life [50]. Psychological well-being is characterised as when an individual accepts themselves, has a positive relationship with others and a purpose in life, experiences optimal personal growth and displays mastery of their environment and autonomous functioning [51].

Various factors can influence well-being, ranging from personal to work-related characteristics. Factors, such as coping strategies, personality, job characteristics, commitment, OCB and many more, can determine a high or low level of well-being as experienced by individuals. To begin with, coping strategies that define a continuous effort to manage specific demands that are perceived by the individual as being beyond their resources [52] could predict the level of well-being of an individual. Individuals who react and deal with their problems in different ways have varying well-being outcomes. Those who employ active coping strategies, such as seeking social support, have a higher level of self-esteem while those who use passive coping styles, such as avoiding problems, are more prone to experience low general well-being [53]. In addition, a decrease in the use of maladaptive coping strategies, including avoidance, externalisation and rumination over time, provides an improved sense of well-being among adolescents [54]. Chua, Milfont and Jose [54] claimed that such adolescents feel happier with their weight, are full of energy or vitality and have improved sleep sufficiency. Also, the implication of using problem-focused coping, consisting of problem-solving coping, positive reappraisal and seeking social support, has been found to influence resilience, which in turn improves the individual level of well-being [55]. Mayordomo and colleagues [55] added that the use of emotion-focused coping, such as negative self-focused coping, religious coping, seeking social support, avoidance coping and overt emotional expression, had an adverse effect on adult mental health, potentially resulting in the development of emotional disorders (e.g. anxiety and depression). It is undeniable that coping strategies are one of the indicators used in determining a high or low level of individual well-being.

Another significant predictor of well-being is personality. Personality is defined as individual differences in characteristic patterns of thinking (cognition), feeling (emotion) and behaving (behaviour) [56]. Studies have found that high levels of life satisfaction can be predicted by conscientiousness [57–59], along with the personality traits of agreeableness [58, 59] and extraversion [57, 58]. Meanwhile, neuroticism can play a role in determining anxiety and depression [58] and low psychological well-being [60, 61]. In addition, Arshad and Rafique [62] claimed that individuals who perceived themselves as being extrovert, open and conscientious have a high probability of frequently experiencing positive affect, while neuroticism predicts negative affect among the elderly. As proposed by McCrae and Costa [63], these positive personality traits make an individual more receptive to new challenges, more open to enjoying the positive experiences in their lives, and more responsible, all of which in turn facilitate an improvement of well-being.

With regard to work-related variables that play a role in determining high or low levels of well-being, it has been revealed that commitment [64, 65], job characteristics [66, 67] and OCB [68, 69] are among the contributing factors. Commitment is when one shows loyalty to an organisation, involving an active relationship with the organisation and an individual willingness to provide something that the organisation seeks [70]. Harris and Cameron [71] claimed that those who experience emotional attachment (affective commitment) to an organisation also have high life satisfaction and self-efficacy, and have low intention to leave the organisation. In addition, it has been found that those who possess affective and normative commitment (a sense of obligation to stay in an organisation) experience psychological well-being at work, characterised as feeling competent, thriving at work, perceiving recognition, being involved in the job, experiencing job satisfaction and feeling interpersonally that they fit at work [72]. Glazer and Kruse [73] suggested that commitment may provide significant meaning to the relationship between an individual and an organisation, making an individual more open to accepting the anxiety produced by work stressors, in turn reducing employee turnover. It seems that commitment benefits both the organisation and the individual.

Another work-related variable that has been determined to impact individual levels of well-being is OCB. In recent years, there has been an increasing amount of literature reporting the association between OCB and well-being. OCB can be defined as “individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system and that in the aggregate promotes the effective functioning of the organisation” [74] (p. 4). Prosocial behaviour demonstrated through OCB can be directed at the organisation or an individual in the organisation [75]. Workers who show an act of OCB either towards an organisation or an individual tend to experience high psychological well-being [76] and have a significant positive correlation with job satisfaction and low hindrance stress [69]. However, even though a substantial amount of research has highlighted the positive outcomes of OCB, it was also revealed that OCB could result in an adverse outcome. Bolino and Turnley [77] claimed that those who exhibit prosocial behaviours, such as working during vacation time, rearranging personal plans due to work and coming to work early and staying late, tend to encounter work overload and job stress, and an increase in work-family conflict. In addition, even though work behaviours or OCB, which is characterised as having a high level of altruism, courtesy, conscientiousness, sportsmanship and civic virtue towards both individuals and organisations, were significantly associated with both positive and negative outcomes, when other psychosocial predictors were included, the effects of OCB were no longer significant [78]. As shown by Ahmad and colleagues [78], other predictors such as negative work characteristics, positive and negative coping, personality and job attitude play a more crucial role in determining well-being. Past studies have emphasised the more positive aspects of OCB, and Bolino and colleagues [77, 79, 80] have highlighted the

negative side of this variable in relation to the individual. Hence, it is essential to investigate both positive and negative impacts of OCB on oneself.

Considerable attention has been paid to the effect of job characteristics on individual levels of well-being. Job characteristics are defined as the motivational elements that explain and give an impact to the meaning, responsibility and knowledge relating to work activities as experienced by the employee [81]. Individuals who perceive that their work is highly demanding, whereby they have little control, are more prone to experiencing a greater need for recovery, feeling more fatigued and having lower well-being [82]. Furthermore, high job demands, low job control and low support experience by workers are correlated with low job satisfaction, high emotional exhaustion, high psychosomatic complaints [83, 84] and high psychological distress [84]. Chambel and Curral [85] also found that job demands negatively predict satisfaction with academic life, and are positively related to anxiety and depression, while job control and support predict academic life satisfaction in a positive direction, and predict anxiety and depression in a negative direction. The negative outcome of high job demands may be due to unfavourable working conditions, with obstacles and challenges that require additional effort that need to be resolved [82]. As proposed by Wilson and colleagues [86], by strengthening the job design, for example by increasing job control (i.e. autonomy) and decreasing job demands (i.e. workload), the psychological adjustment to work could be strengthened (i.e. better job satisfaction and low job stress).

Not only was the demands-resources model used among organisational workers to explain job characteristics and their relation to well-being, this model was also applied among university students [87–89]. It was revealed that students who encounter high study demands (e.g., study conditions that trigger stress reactions) and feel that they lack study resources eventually will become exhausted and cynical, and in turn experience negative psychological well-being [88]. Mokgele and Rothmann [88] explain psychological unwell-being as being unable to cope with problems, experiencing irritability and mood swings, and avoiding contact with others. They also found that study resources, particularly supportive relationships with lecturers, the nature of study tasks, and peers' social support had a strong effect on the energy and motivation of students. Similarly, Cilliers and Flotman [89] emphasised that postgraduate students who experience distress produced by job/study demands (e.g., role demands, being responsible for others, interpersonal demands) have feelings of languishing and being overwhelmed. Meanwhile, those who experience eustress caused by job/study resources (e.g., support from lecturers, interpersonal relationships) also eventually experience a feeling of flourishing (high self-efficacy, locus of control, and optimism). Not only that, students who have a perceived lack of resources (no support from peers, family and faculty members) may tend to experience a lack of motivation and a feeling of being disconnected [90], hence an increase in their stress levels and a lowered sense of positive well-being. In summary, past studies have highlighted various psychosocial characteristics in determining one's level of well-being not only among organisational workers but also among university students.

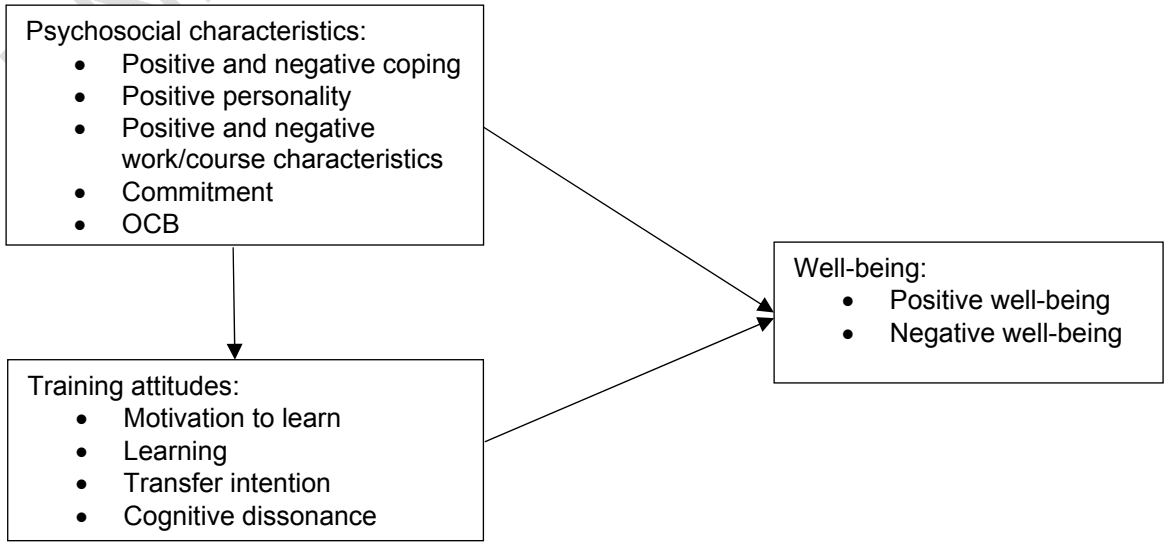
1.3 Current study

This study is a replication of the Zaiedy Nor and Smith [35] research that also aimed to investigate the link between training effectiveness predictors and well-being. However, a few changes were made to extend the investigation. As an example, this work focused on training in the context of an educational setting, where the sample was undergraduate students. Also, this study had two phases of data collection, in which certain variables were introduced at different time points, such that changes in well-being over time could be analysed.

Training and education are different in certain respects, but it is clear that these two concepts share an essential element, where both of them involve a learning process. The central focus of both activities is to develop individual knowledge and skills, and enhance human potential and talent [91]. Some of the differences between training and education are that training is more focused on specific knowledge, skills and abilities that directly relate to the job description or improve productivity, whereas education is more broad, focusing on personal development and life experience [91]. Garavan [91] added that the timeframes of training and education could differ; while training is usually performed over a short period, education can be lifelong, or in the case of university education, three to four years. Some essential similarities between training and education are that both can be structured and mechanistic and, more significantly, fundamentally involve learning processes [91]. In addition, training among university students is common today and can take place in many forms; for example, workshop-focused programmes or even coursework. Consequently, not only is it crucial to investigate the association between training attitudes and the well-being of workers, it is also worth examining the association between these variables in an educational context among students.

The present study also paid attention to the first-year undergraduate student as the sample, because it has been reported that, during the entry stage, new students often face various difficulties and challenges. Stewart [92] proposed that students in this stage may have problems in maintaining motivation, complying with academic demands and establishing a clear purpose. Also, they are more prone to experiencing a decrease in independence and increase in isolation.

This study was based on the demands-resources-individual effects model [93] that proposed the importance of both psychosocial stressors and individual difference factors in developing subjective experiences of stress or well-being. By providing a combination of the elements of two well-known work stressor models — the demand-control-support [94] and effort-reward-imbalance models [95] — a crucial element was added to the study — the influence of individual differences in determining ones' levels of positive and negative well-being, along with health-related outcomes. Mark and Smith [93] suggested that those who experience low work demands (job demands and extrinsic efforts), high work resources (job control, support and rewards) and have positive types of individual differences (coping style, attributional style and intrinsic effort) tend to experience low anxiety and depression, and high job satisfaction. More importantly, this model emphasises flexibility, whereby different organisational and personal variables can be placed into the framework, either as predictors or outcomes. Hence, this study applied the key elements of the model — work characteristics and individual differences — and, most importantly, added a new variable — attitude to training — to determine positive and negative well-being.



As shown in Figure 1, it was predicted that certain types of psychosocial characteristics predict positive and negative attitudes toward training and positive and negative well-being. Moreover, students who perceive themselves as having high motivation to learn the content of a course, understand the knowledge presented in the class better than they did before undertaking the course, and have the intention of implementing the new knowledge in everyday life, also experience positive well-being. Meanwhile, those who face cognitive dissonance when applying the new knowledge they obtained from a course are more prone to encounter negative well-being.

Thus, the main aims of this study were to: (1) investigate the influence of psychosocial characteristics on training attitudes and well-being; and (2) examine the effect of attitudes to training on well-being among undergraduate students. The research hypotheses were:

H1: Psychosocial characteristics influence training attitudes and well-being, and
H2: Training attitudes predict individual levels of well-being

2. METHODS

2.1 Participants

This research involved a quantitative longitudinal study, comprising two phases of data collection. The questionnaires measured various psychosocial characteristics, four training attitudes and the level of well-being among undergraduate psychology students at Cardiff University.

A total of 180 undergraduates (first-year psychology students) completed the study at Time 1. From this number, 95 students (52.78% return rate) completed both surveys at Times 1 and 2. At Time 1, the majority of the 180 respondents were female (156, 86.7%), born in the year 1998 (85, 47.2%), White (132, 73.3%) and native speakers of English (156, 86.7%). Meanwhile, out of the 95 students who participated in both phases, the majority were female (83, 87.4%), born in the year 1998 (46, 48.4%), White (69, 72.6%) and native speakers of English (80, 84.2%).

2.2 Procedure

Prior to conducting the study, ethical approval was obtained from the Ethics Committee, School of Psychology, Cardiff University. In this study, two time points of data administration were required – Times 1 and 2.

The Time 1 data collection was undertaken during the induction week for all the psychology first-year undergraduate students. For this specific session, eight researchers were assigned to distribute questionnaires. Thus, each researcher needed to minimise the number of items asked in the maximum allocated time of five to ten minutes that was allocated per researcher. In this phase, the measures included demographics, three psychosocial characteristics, one training attitude (motivation to learn) and a baseline level of positive and negative well-being.

For Time 2, data collection was carried out one-and-a-half months before the examination week began. Students could choose to be rewarded with extra course credit or by being

paid. The measurement included four psychosocial characteristics, three training attitudes and positive and negative well-being.

2.3 Materials

This study used single-item measures because they have advantages over multiple-item measures. First, they are economically more favourable. As Burisch [96] noted, the process of measuring multiple items consumes significant funds and human resources [97]. Secondly, single items help reduce non-response rates [98]; with multi-item questionnaires, participants tend not to provide honest answers, and sometimes do not give any response at all. Thirdly, and most importantly, this approach is more practical. Thus, most of the variables in this study used single items and brief measures.

Psychosocial characteristics and well-being were assessed using the short Smith Wellbeing scale (Short-Swell) [99]. Nine items from this scale were used, comprising negative and positive work characteristics, positive and negative coping, positive personality, OCB, commitment and positive and negative well-being; however, only positive personality and positive and negative coping were used at Time 1, along with a baseline level of positive and negative well-being. Meanwhile, positive and negative work characteristics, OCB and commitment were administered at Time 2, along with the follow-up level of positive and negative well-being. During Time 1, coping strategy items assessed how the students dealt with problems, either positively (e.g. focusing on the problem or getting social support) or negatively (e.g. avoiding the problem, blaming themselves or using wishful thinking). Also, one item of positive personality measured participants' overall levels of self-esteem, self-efficacy and optimism.

Next, work characteristics, which were administered at Time 2, assessed the participants' course demands, effort, control, support and reward that they experienced at university. Regarding the OCB item, which was also asked at Time 2, the participants' behaviours were measured, such as being helpful and courteous to, and a good sport with other people in the university. Next, commitment to university assessed whether the participants had high study satisfaction and whether they were motivated students that did not wish to quit their studies. Lastly, well-being items, which were assessed at Times 1 and 2, measured the participants' level of life satisfaction, happiness, stress, anxiety and depression. All items had a response scale from 1 (Not at all) to 10 (Very much so). The reliability of Time 1 items was found to be 0.778 with respect to Cronbach's coefficient alpha, with a 0.416 mean inter-item correlation. Meanwhile, the reliability of Time 2 items was 0.638 Cronbach's coefficient alpha, with a 0.221 mean inter-item correlation.

Training attitudes consisted of motivation to learn, learning, transfer intention and cognitive dissonance. All of the items for these variables used other researchers' work as a guideline, with the statement being modified in accordance with the research objectives, and to ensure that it was suitable for the specific sample. Motivation to learn was asked at Time 1, while learning, transfer intention and cognitive dissonance were administered at Time 2. Motivation to learn had four items that originated from the Motivated Strategies for Learning Questionnaire [100]. This construct assessed participant eagerness to learn the content of their training programmes. The reliability of this construct was found to be 0.879, with a 0.656 mean inter-item correlation. Meanwhile, learning and transfer intention had three and two items, respectively. For the learning construct, participant perception regarding their improved knowledge after attending the training was measured, while the transfer intention construct assessed the respondents' intentions to implement the new knowledge and skills in their everyday lives. These two variables were derived from Machin and Fogarty's [14] study. The reliability of learning and transfer intention were, respectively, 0.857 and 0.792,

with a 0.668 and 0.657 mean inter-item correlation. Finally, cognitive dissonance had two items that originated from a study by Levin [101]. This construct assessed participants' uncomfortable negative affective state when using newly acquired knowledge and skills; the reliability of these items was determined to be 0.654, with a 0.486 mean inter-item correlation. The response scale for all training attitude items ranged from 1 (Strongly disagree) to 10 (Strongly agree).

The justification for asking about specific items at different time points was that some questions (i.e. all of the variables at Time 2) were not appropriate to be asked prior to the beginning of the university course. This approach was employed because the students may have been confused and might not have known how to respond to these questions due to not having had any experience related to the items being asked. Thus, in order for them to respond to these constructs, they had to undergo training in the context of university education first and to have gained some experience of university life.

The list of questions in the survey, and the frequencies (%) in the different response categories, are shown in Table 1 (see Appendix).

2.4 Data analysis

The data were analysed using IBM Statistical Package for Social Sciences (SPSS) 20. Pearson's correlation coefficients and multiple regressions were used to study the relationships between psychosocial characteristics, training attitudes and well-being.

3. RESULTS

This study aimed to investigate the influence of psychosocial characteristics on training attitudes and well-being and to determine the impact of training attitudes on student levels of well-being.

Before conducting the main analyses, a preliminary investigation was carried out to determine the differences among participants. A t-test analysis found that there were no significant differences in positive well-being among the participants who had taken part in Time 1 only or those who had taken part in both Times 1 and 2; $t(178) = 0.86$, $p = .388$. In addition, there were no significant differences in negative well-being among participants who only took part in Time 1 and those who took part in both Times 1 and 2; $t(178) = 0.51$, $p = .611$.

Furthermore, a paired sample test was conducted, and demonstrated that there were no significant differences in positive well-being at Times 1 and 2, $t(94) = -0.35$, $p = .727$ – and no significant differences in negative well-being at Times 1 and 2, $t(94) = 1.47$, $p = .146$. These findings suggest that student levels of well-being prior to the academic semester and a few months after they started were the same, with their levels of well-being neither increasing nor decreasing.

3.1 Objective 1: Influence of psychosocial characteristics on training attitudes

The first objective of this study was to determine the predictors of training attitudes in the context of educational settings. Two types of analyses were performed to investigate the influence of psychosocial aspects at Times 1 and 2 on motivation to learn (Time 1), and learning, transfer intention and cognitive dissonance (Time 2). First, a correlation analysis was conducted, followed by regression analyses to examine the association between independent and dependent variables. However, due to the small sample size, where only

95 participants took part in both phases of the data collection, the regression analyses needed to be interpreted with caution.

Motivation to learn was one of the training attitude variables that was recorded at Time 1 (pre-test), along with personal characteristics, including negative coping, positive coping and positive personality. Table 2 revealed that there was a significant positive correlation between positive coping and motivation to learn (equal to $r(178) = .45$, $p < .01$) and a weak positive correlation with positive personality (equal to $r(178) = .15$, $p < .01$). In addition, a negative relationship could be seen between negative coping and motivation to learn (equal to $r(178) = -.25$, $p < .05$).

Meanwhile, the regression analyses in Table 5 showed that all three psychosocial characteristics at Time 1 significantly explained 20.3% of the variance in the motivation to learn, and only positive coping significantly predicted this variable ($\beta = .45$). This finding suggests that students who actively employed positive coping strategies, such as focusing on a problem and trying to resolve it, as well as receiving social support, were more eager to learn new things at university.

Three attitudes to training were asked at Time 2 — learning, transfer intention and cognitive dissonance. The correlation analyses (Table 2) revealed that positive coping had a positive correlation with learning (equal to $r(93) = .21$, $p < .05$), and was negatively correlated with cognitive dissonance (equal to $r(93) = -.34$, $p < .01$). In addition, a positive relationship could be seen between negative coping and cognitive dissonance (equal to $r(93) = .29$, $p < .01$), while positive personality had a weak negative correlation with cognitive dissonance (equal to $r(93) = .21$, $p < .05$).

Next, four psychosocial characteristics were recorded at Time 2 — positive and negative work characteristics, OCB and commitment. The correlation analyses (Table 2) demonstrated that positive work characteristics, OCB and commitment had a significant positive correlation with learning and transfer intention. All of them were greater than, or equal to, $r(93) = .34$, $p < .01$. On the contrary, a significant negative relationship could be seen among positive work characteristics, OCB and commitment to cognitive dissonance. The relationships were greater than, or equal to, $r(93) = .22$, $p < .05$.

Meanwhile, regression analyses in Table 3 revealed that when learning is the dependent variable, Model I, with Time 1 psychosocial characteristics (positive and negative coping and positive personality) as the predictors, explained 2.4% of the variance and was not significant ($F(3, 91) = 1.84$, $p > .156$). Model II, in which four psychosocial characteristics that were recorded at Time 2 (positive and negative work characteristics, OCB, and commitment) were added, explained significantly more variance (R^2 change = .430, $F(4, 87) = 18.155$, $p < .000$). The model explains 48.5% of the variances in learning and was significant ($F(7, 87) = 11.715$, $p < .000$). The significant predictors in Model II were positive work characteristics, OCB and commitment.

Table 3 also indicates that, when transfer intention is the dependent variable, Model I, with Time 1 psychosocial characteristics (positive and negative coping and positive personality) as the predictors, explained 0.4% of the variance and was not significant ($F(3, 91) = .882$, $p > .454$). Model II, in which four psychosocial characteristics (positive and negative work characteristics, OCB, and commitment) were added, explained more variance and was significant (R^2 change = .471, $F(4, 87) = 20.478$, $p < .000$). The model explains 45.9% of the variance in transfer intention and was significant ($F(7, 87) = 12.403$, $p < .000$). The significant predictors in Model II were OCB and commitment.

Table 2. Correlation analysis between psychosocial characteristics, training attitudes and well-being

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PC (T1) (1)	1													
NC (T1) (2)	-.517**	1												
PP (T1) (3)	.425**	-.391**	1											
MTL (T1) (4)	.447**	-.248**	.151*	1										
PWB (T1) (5)	412**	-.390**	.590**	.150*	1									
NWB (T1) (6)	-.175*	.404**	-.405**	.051	-.561**	1								
NWC (T2) (7)	-.119	.054	-.068	-.122	-.070	.161	1							
PWC (T2) (8)	.112	.018	.209*	.165	.226*	-.156	-.268**	1						
OCB (T2) (9)	.235*	-.159	.284**	.179	.146	-.009	-.022	.124	1					
CM (T2) (10)	.260*	-.283**	.174	.290**	.218*	-.108	-.108	.422**	.275**	1				
LN (T2) (11)	.210*	-.097	.180	.222*	.194	-.093	-.089	.558**	.358**	.552**	1			
TI (T2) (12)	.166	-.103	.057	.262*	.187	-.115	.002	.341**	.498**	.575**	.673**	1		
CD (T2) (13)	-.335**	.292**	-.214*	-.257*	-.161	.000	.183	-.258*	-.221*	-.229*	-.195	-.079	1	
PWB (T2) (14)	.218*	-.161	.303**	.218*	.392**	-.303**	-.068	.167	.272**	.452**	.220*	.343**	-.227*	1
NWB (T2) (15)	-.178	.237*	-.307**	-.138	-.396**	.429**	.152	-.096	-.053	-.163	-.050	-.049	.176	-.678**

PC = Positive coping, NC = Negative coping, PP = Positive personality, MTL = Motivation to learn, PWB = Positive well-being, NWB = Negative well-being, NWC = Negative work characteristics, PWC = Positive work characteristics, OCB = organisational citizenship behaviour, CM = Commitment, LN = Learning, TI = Transfer intention, CD = Cognitive dissonance, T1 = Time 1, T2 = Time 2.

*** p > .001, * p > .05.*

Table 3: The predictors of learning and transfer intention

Dependent variable	Learning						Transfer intention					
Independent variable	Model I			Model II			Model I			Model II		
Step 1 (Time 1)	**β**	**t**	**p**	**β**	**t**	**p**	**β**	**t**	**p**	**β**	**t**	**p**
Positive coping	.177	1.453	.150	.069	.737	.463	.157	1.268	.208	.033	.356	.723
Negative coping	.031	.263	.793	.041	.440	.661	-.032	-.261	.795	.037	.405	.687
Positive personality	.119	1.053	.295	-.034	-.376	.708	-.017	-.146	.884	-.161	-1.826	.071
Step 2 (Time 2)												
Positive work characteristics				.410	4.511	.000				.161	1.799	.075

Negative work characteristics			.065	.806	.422			.092	1.165	.247
OCB			.291	2.634	.010			.405	4.942	.000
Commitment			.325	3.529	.001			.435	4.792	.000
R^2	.056			.485		.028			.499	
ΔR^2	.056			.430		.028			.471	
F change	1.784			18.155		.882			20.478	
Sig. F change	.156			.000		.454			.000	

Table 4: The predictors of positive and negative well-being

Dependent variable	**Positive well-being**						**Negative well-being**					
Independent variable	**Model I**			**Model II**			**Model I**			**Model II**		
Step 1 (Time 1)	**β**	**t**	**p**	**β**	**t**	**p**	**β**	**t**	**p**	**β**	**t**	**p**
Positive coping	-.002	-.015	.988	-.008	-.062	.950	.062	.449	.654	.067	.471	.639
Negative coping	-.018	-.158	.874	.103	.904	.369	.138	1.183	.240	.105	.839	.404
Positive personality	.269	2.424	.017	.272	2.493	.015	-.271	-2.441	.017	-.293	-2.441	.017
Motivation to learn	.162	1.345	.182	.031	.271	.787	-.090	-.749	.456	-.060	-.475	.636
Step 2 (Time 2)												
Positive work characteristics				-.042	-.338	.736				-.039	-.285	.776
Negative work characteristics				-.032	-.332	.741				.132	1.236	.220
OCB				.020	.180	.858				.105	.844	.401
Commitment				.387	3.081	.003				-.093	-.670	.505
Learning				-.218	-1.508	.136				.134	.842	.402
Transfer intention				.238	1.606	.112				-.064	-.394	.694
Cognitive dissonance				-.123	-1.169	.246				.068	.586	.559
R^2	.120			.307			.117			.160		
ΔR^2	.120			.187			.117			.043		
F change	3.030			3.170			2.956			.599		
Sig. F change	.022			.005			.024			.755		

Table 5: The predictors of motivation to learn

Model	Beta	Std err	β	T	P
(Constant)	25.369	2.350		10.795	.000
Positive coping	1.196	.217	.452	5.510	.000
Negative coping	-.091	.189	-.039	-.481	.631
Positive personality	-.122	.162	-.058	-.752	.453
Model: R = .451, R^2 = .203				F = 14.876	.000

Regarding cognitive dissonance as the dependent variable, Model I, with positive and negative coping, and positive personality that were recorded at Time 1 as the predictors, explained 10.9% of the variance and was significant ($F(3, 91) = 4.823$, $p < .004$). Model II, where the remaining psychosocial characteristics at Time 2 were added, explained slightly more variance, but this increase was not significant (R^2 change = .073, $F(4, 87) = 2.012$, $p > .100$). The model explained 14.7% of the variance in cognitive dissonance and was significant ($F(7, 87) = 3.309$, $p < .004$). However, none of the psychosocial characteristics at Times 1 and 2 significantly predicted this variable.

3.2 Objective 2: Influence of psychosocial characteristics and training attitudes on well-being

Moving on to the next objective, which was to investigate predictors of positive and negative well-being, the correlation analyses in Table 2 demonstrated that almost all of the positive psychosocial characteristics (except for positive coping), along with motivation to learn, learning, and transfer intention, have a significant positive correlation with positive well-being. All of them were greater than or equal to $r(93) = .22$, $p < .05$. In addition, a negative correlation could be seen between cognitive dissonance and positive well-being (equal to $r(93) = -.23$, $p < .05$). Next, negative coping was positively correlated with negative well-being, that was equal to $r(93) = .24$, $p < .05$, while positive personality was negatively correlated with negative well-being, equal to $r(93) = -.31$, $p < .01$.

Meanwhile, regression analyses in Table 4 revealed that when positive well-being is the dependent variable, Model I, with Time 1 psychosocial characteristics (positive and negative coping and positive personality) and motivation to learn as the predictors, significantly explained 8% of the variance ($F(4, 89) = 3.030$, $p < .022$). Model II, in which four psychosocial characteristics and three attitudes to training that were recorded at Time 2 were added, explained significantly more variance (R^2 change = .187, $F(7, 82) = 3.170$, $p < .005$). The model explains 21.4% of the variance in positive well-being and was significant ($F(11, 82) = 3.307$, $p < .001$). The significant predictors in Model II were positive personality and commitment.

Furthermore, Table 4 also indicates that, when negative well-being is the dependent variable, Model I, with Time 1 psychosocial characteristics and motivation to learn as the predictors, significantly explained 7.8% of the variance ($F(4, 89) = 2.956$, $p < .024$). Model II, in which four psychosocial characteristics and three attitudes to training that were recorded at Time 2 were added, explained slightly more variance, but this increase was not significant (R^2 change = .043, $F(7, 82) = .599$, $p > .755$). The model explains 4.8% of the variance in negative well-being and was not significant ($F(11, 82) = 1.422$, $p > .179$). The only significant predictor in Model II was positive personality.

4. DISCUSSION

This study aimed to investigate the influence of psychosocial characteristics on training attitudes, and to determine the association between psychosocial characteristics and training attitudes in relation to student levels of well-being. The psychosocial characteristics consisted of positive and negative coping, positive personality, positive and negative work characteristics, OCB and commitment. Meanwhile, the attitudes toward training included motivation to learn, learning, transfer intention and cognitive dissonance. As for well-being, positive and negative well-being questions were asked at the beginning, and towards the end, of the semester.

Regarding the first objective, it was revealed that positive coping was positively associated with motivation to learn. This result suggests that students who try to cope with problems in a positive way, such as focusing on the issue and trying to resolve it or seeking social support, also have a higher motivation to learn at the beginning of the semester. This finding was similar to previous research [102] which discovered that autonomous or intrinsic motivation could be predicted by actively planning coping strategies. Also, positive work characteristics, OCB and commitment were positively related to learning. This finding indicates that students who perceived that their course had positive characteristics (e.g., support from course mates and teachers, control over how to do things, and appropriate rewards) showed very good attitudes to others (e.g., being helpful and courteous) and were also committed to their studies, tended to perceive that their knowledge had improved after attending all of the classes. Moreover, those who viewed themselves as having very good attitudes towards others and had committed to their studies also tended to have high intentions to implement the knowledge that they had learned in class in everyday life. These result are in line with those of Zaiedy Nor and Smith [35], who also found that certain types of psychosocial characteristics were associated with positive attitudes to training, and particularly that positive psychosocial characteristics (positive coping, positive personality, positive work characteristics, OCB and commitment) significantly correlated with positive training attitudes (motivation to learn, learning, and transfer intention). In addition, these results conform to the work of Anvari and colleagues [103], who revealed that work-related characteristics — particularly commitment and OCB — have a positive relationship with training variables, especially motivation and learning outcomes.

Moving on to the second objective, which was to investigate the association between psychosocial characteristics and training attitudes on well-being among university students, correlation analyses revealed that positive training attitudes positively correlated with positive well-being, while negative training attitudes negatively correlated with positive well-being. Positive attitudes toward training include motivation to learn, learning, and transfer intention, whereas negative attitudes toward training consist of cognitive dissonance. These results suggest that students who perceived themselves as having high motivation at the beginning of the semester consider that they have learned a lot throughout the semester and have the intention to implement the knowledge in their everyday lives; they also perceived that they have a good level of positive well-being (always in a good mood, happy and satisfied with life). Also, those who experienced cognitive dissonance, characterised as the uncomfortable feeling whenever they used the newly acquired knowledge and confusion either to use the new knowledge or prior knowledge before coming to class, also perceived that they are not always in a good mood, are not happy and have low life satisfaction.

The positive relationship between motivation to learn and positive well-being is consistent with prior studies that found that motivation, particularly achievement motivation significantly correlated with general well-being [104], and learning motivation correlated positively with four domains of quality of life: physical, psychological, social and environmental [20]. One possible explanation for this relationship is, as proposed by LePine, LePine and Jackson [105], that students with high motivation to learn will perceive a stressful situation as being

challenging and promote mastery and personal growth and thus reduce their stress level. Regarding the relation between learning and well-being, this finding is in line with the results of Holfve-Sabel [106], Aberg [107], and Jenkins and Mostafa [25]: that learning is positively correlated with well-being. As suggested by Aberg [107], participation in learning activities is associated with high well-being due to the benefits of learning, where such activities could provide a medium to socialise with other people and increase one's knowledge and skills, resulting in the participant feeling much better about themselves and their life. Meanwhile, the negative relationship between cognitive dissonance and well-being is similar to the finding of Palsane [108]. One possible explanation for this finding is that, when an individual is experiencing cognitive dissonance, where one encounters two or more cognitions that contradict each other — for example, in applying the newly acquired knowledge and skills or prior knowledge and skills that one typically uses — this contradiction could produce an uncomfortable negative affective state that may lead to feelings of discomfort, arousal and restlessness [16]. The negative feelings might be associated with the experience of low positive well-being. The relation between all of the training attitudes and well-being is consistent with the findings of Zaiedy Nor and Smith [35], which also revealed that positive training attitudes (motivation to learn, learning, and transfer intention) have a significant positive correlation with positive well-being, and that cognitive dissonance positively correlates with negative well-being.

However, the associations between training attitudes and well-being were no longer significant when other predictors, particularly psychosocial characteristics, were included in the regression analyses. This finding suggests that earlier results attributed to training attitudes may reflect other factors and that personality and commitment are stronger predictors than motivation to learn, learning, transfer intention and cognitive dissonance. This study highlights the vital role of positive personality in well-being. It was revealed that positive personality predicts positive well-being in a positive direction and predicts negative well-being in a negative direction. Certain prior studies have noted the importance of personality for individual levels of well-being, including Tanksale [57] and Hojat and colleagues [109]. Tanksale [57] found that all of the Big Five personality traits (openness, extraversion, agreeableness, conscientiousness and emotional stability) explain 17% of the variance in life satisfaction, 35% of the variance in positive affect and 28% of the variance in negative affect. Meanwhile, medical students in the Hojat and colleagues [109] study, who had less positive personality profiles, were reported to have poor physical health, which included higher scores for somatic and agitation symptoms and chronicity factors of health. The explanation for this result was that individuals with a positive personality are more flexible in the face of new challenges and experiences [63], indicating a sociable life in which it is easy for them to form and maintain relationships [61]. This type of disposition facilitated them in developing optimistic expectancies and helped them lessen their stress and anxiety and improve their well-being.

The last studied psychosocial characteristic that influences well-being is commitment. It was found that students who committed to their studies were associated with experiencing high satisfaction in life, always being in a good mood and generally being happy. The impact of commitment on well-being can be seen from previous studies [72, 110, 111]. McInerney and colleagues [72] revealed that commitment, particularly affective and normative commitment, could predict high psychological well-being at work, characterised as a feeling of competency, interpersonal fit and thriving at work, perceived recognition, desire for job involvement and high job satisfaction. Similarly, Kanste [110] discovered that occupation commitment not only positively correlates with psychological well-being, but also has an association with other variables, such as work engagement, personal accomplishment, mental resources and the willingness to stay in an organisation. Also, Glazer and Kruse [73] suggested that commitment could buffer the relationship between stressor and strain. One

possible explanation is that commitment creates meaning in the overall relationship an individual has with an organisation, thus making the individual more accepting of the anxiety produced by work stressors [73]. Therefore, in the present research, it may be that students' commitment towards their study and university makes them more open to accepting the anxiety caused by the stress from their study and coursework.

4.1 Implications, limitations and future directions

The present study contributes to the existing body of knowledge. This study was a replication of a study by Zaiedy Nor and Smith [35] that also examined the link between training attitudes and well-being. The results of the present study are in line with those of the previous one [35], in which both positive training attitudes that consist of motivation to learn, learning and transfer intention and negative training attitudes (cognitive dissonance) are significantly correlated with positive well-being. However, the associations were no longer significant when other predictors were included. Similarly, both the aforementioned study [35] and this one highlight the strong association between personality and commitment with respect to individual well-being.

A few limitations could be found with this study. First, the sample size was too small. Also, because this study was longitudinal, with two phases of data collection, only 95 participants completed both phases. Hence, more advanced analyses could not be performed and, in fact, the regression analyses need to be interpreted with caution. Second, this study examined four attitudes to training, in the context of an educational setting, where naturally occurring training took place. Throughout the semester, participants were involved with various classes that focused on different subjects, and their overall attitudes towards these classes were recorded. As a result, a clear distinction cannot be drawn as to which classes or subjects may have influenced individual levels of well-being. It might be that attitudes towards different classes or programmes brought varying influences to the levels of well-being. Third, although this study applied a longitudinal approach that involved two phases of data collection, a causal effect relationship could not be determined. The same variables (both independent and outcome variables) were not recorded twice due to the fact that questions regarding certain variables were not appropriate for the beginning of the semester; for example, variables related to learning, transfer intention and cognitive dissonance could not be recorded at Time 1 because the participants needed to experience the classes to be able to respond to the survey.

These limitations suggest recommendations and improvements for future studies. First, a better approach to selecting participants, and consideration of a larger sample, may be useful, to provide data that can be analysed with greater confidence. Second, it may also be more advantageous if the causal effect relationship could be examined. A repeated measure design, with three or four time points for data collection, could be employed. This approach would not only add valuable facts to the body of knowledge, but would also help to explain the link between training attitudes and well-being in greater detail. Third, a focus on a specific programme, module or course would be more meaningful in investigating whether attitudes to specific training programmes, lecturers or modules helped to enhance individual levels of well-being. For example, two types of training programmes with different focuses (e.g. soft skills versus skills related to a job) may be useful for comparative purposes. Attitudes toward training in different contexts might also produce different well-being outcomes.

5. CONCLUSIONS

Training and education are essential for developing expertise, gaining more knowledge and skills and increasing employability. At the same time, maintaining a level of positive well-being is crucial for preserving a positive mood and allowing life to be more meaningful. Thus, it is important to understand the link between attitudes to training and well-being levels in the context of educational settings, among university students. This study found that certain types of psychosocial characteristics, particularly the positive variables (positive coping, positive work characteristics, OCB and commitment) were positively associated with positive training attitudes (motivation to learn, learning, and transfer intention). In addition, in students with positive attitudes towards their education or coursework (high motivation to learn, learning, transfer intention, and low cognitive dissonance), those attitudes are correlated with positive well-being. However, these relationships were no longer significant when personality and commitment were included. Further research is required to confirm these relationships and to investigate the links between the factors analysed in this study in more depth.

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APPENDIX

Table 1. Survey questions and frequencies (%) in response categories

Time 1 (N= 180)

Psychosocial characteristics									
To what extent do you deal with problems in a positive way (e.g. you focus on the problem and try to solve it; you got social support)?									
Not at all									Very much so
1	2	3	4	5	6	7	8	9	10
0.6	1.1	6.1	5.6	9.4	13.9	18.9	22.8	12.2	9.4
To what extent do you deal with problems in a passive way (e.g. avoid them, use wishful thinking; blame yourself)?									
Not at all									Very much so
1	2	3	4	5	6	7	8	9	10
2.8	6.1	12.8	12.2	10.0	10.6	21.1	15.6	6.1	2.8
Do you think you have a positive personality (e.g. open; conscientiousness; extravert; agreeable; stable; high self-esteem; optimistic)?									
Not at all									Very much so
1	2	3	4	5	6	7	8	9	10
1.1	7.8	11.1	10.0	10.6	8.9	12.8	17.2	13.9	6.7
Training attitudes									
When I am in the classes, it is important for me to learn what is being taught in the classes.									
Strongly disagree									Strongly agree
1	2	3	4	5	6	7	8	9	10
0.00	0.00	0.00	0.00	0.6	3.9	13.9	21.1	20.6	39.4
When I am in the classes, I am looking forward to learning the content of the classes.									
Strongly disagree									Strongly agree
1	2	3	4	5	6	7	8	9	10
0.00	0.00	0.6	2.2	7.2	5.0	15.0	21.7	19.4	28.3
When I am in the classes, I think I will be able to use what I learn in everyday life.									
Strongly disagree									Strongly agree
1	2	3	4	5	6	7	8	9	10
I think what I am learning in the classes is useful for me to know.									
Strongly disagree									Strongly agree
1	2	3	4	5	6	7	8	9	10

0.6	0.6	3.3	5.0	9.4	8.9	25.6	21.1	13.9	11.1

Well-being

In life generally, do you have a high level of well-being (e.g. high satisfaction; a positive mood; happiness)?

Not at all								Very much so	
1	2	3	4	5	6	7	8	9	10
1.1	1.1	5.6	8.9	6.0	12.8	18.3	22.8	17.8	5.0

In life generally, do you have a low level of well-being (e.g. stress; anxiety; depression)?

Not at all								Very much so	
1	2	3	4	5	6	7	8	9	10
5.6	9.4	17.2	12.2	11.1	11.7	12.8	10.6	5.6	3.3

Time 2 (N= 95)

Psychosocial characteristics

To what extent does your course have positive characteristics (e.g. control over what you do or how you do it; support from a classmate; support from teachers; appropriate rewards)?

Not at all								Very much so	
1	2	3	4	5	6	7	8	9	10
0.0	2.1	2.1	9.5	10.5	24.2	16.8	24.2	0.0	10.5

To what extent does your course have negative characteristics (e.g. high demands; requires a lot of effort; little consultation on change; role conflict; issues with other members of course)?

Not at all								Very much so	
1	2	3	4	5	6	7	8	9	10
0.0	5.3	7.4	11.6	9.5	18.9	24.2	21.1	1.1	1.1

Are you a model student (e.g. helping; courteous; a good sport)?

Not at all								Very much so	
1	2	3	4	5	6	7	8	9	10
3.2	3.2	9.5	13.7	12.6	15.8	25.3	11.6	3.2	1.1

Are you committed to your university (e.g. high study satisfaction; a motivated student who does not intend to quit study)?

Not at all									Very much so
1	2	3	4	5	6	7	8	9	10
0.0	1.1	7.4	10.5	7.4	15.8	13.7	24.2	10.5	9.5

Training attitudes

I understand the knowledge and skills presented in the classes better than before undertaking those classes.

Strongly disagree								Strongly agree	
1	2	3	4	5	6	7	8	9	10
0.0	0.0	3.2	6.3	11.6	11.6	22.1	24.2	9.5	11.6

I know the importance of knowledge and skills presented in the classes better than before undertaking those classes.

Strongly disagree								Strongly agree	
1	2	3	4	5	6	7	8	9	10
0.0	1.1	5.3	9.5	10.5	7.4	24.2	24.2	7.4	10.5

My knowledge and skills, which are taught in the classes were improved after undertaking those classes.

Strongly disagree								Strongly agree	
1	2	3	4	5	6	7	8	9	10
0.0	1.1	4.2	2.1	12.6	13.7	18.9	23.2	14.7	9.5

I will look for opportunities and use the techniques I learned in classes as much as I can.

Strongly disagree								Strongly agree	
1	2	3	4	5	6	7	8	9	10
1.1	1.1	4.2	11.6	13.7	13.7	17.9	21.1	8.4	7.4

I will spend time thinking about how to use the knowledge and skills that I have learned in the classes.

Strongly disagree								Strongly agree	
1	2	3	4	5	6	7	8	9	10
0.0	3.2	5.3	15.8	11.6	20.0	22.1	13.7	3.2	5.3

Sometimes I feel uncomfortable when using the techniques/skills I learned in the classes.

Strongly disagree								Strongly agree	
1	2	3	4	5	6	7	8	9	10
5.3	10.5	27.4	12.6	14.7	14.7	9.5	2.1	2.1	1.1

Sometimes I am confused either to apply the newly acquired techniques/skills in the classes or techniques/skills that I usually used before undertaking the classes.

Strongly disagree								Strongly agree	
1	2	3	4	5	6	7	8	9	10
0.0	4.2	9.5	10.5	13.7	24.2	20.0	11.6	3.2	3.2

Well-being

In life generally, do you have a high level of well-being (e.g. high satisfaction; a positive mood; happiness)?

Not at all								Very much so	
1	2	3	4	5	6	7	8	9	10
1.1	3.2	7.4	8.4	7.4	10.5	15.8	22.1	12.6	11.6

In life generally, do you have a low level of well-being (e.g. stress; anxiety; depression)?

Not at all								Very much so	
1	2	3	4	5	6	7	8	9	10
5.3	16.8	16.8	12.6	14.7	10.5	9.5	7.4	5.3	1.1

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