

EFICACIA DE LOS PROGRAMAS DE EDUCACIÓN PARA EL EMPRENDIMIENTO EN LA INTENCIÓN EMPRENDEDORA

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Resumen:

Este trabajo pretende analizar la efectividad de diseñar programas de educación para el emprendimiento en la Intención Emprendedora (EI) en alumnos universitarios. La Teoría del Comportamiento Planificado (TCP) sirve para conocer en qué medida las Actitudes Personales, las Normas Sociales y el Control percibido del Comportamiento actúan sobre la Intención Emprendedora. Se aplica un análisis de regresión a una muestra de 1.511 estudiantes de una universidad pública española en tres cursos académicos. Se emplea como filtro la participación en programas de educación al emprendimiento, tanto si han cursado una asignatura específica de creación de empresas y/o han intervenido en acciones de fomento del espíritu emprendedor. Adicionalmente, se añade un grupo de control. Entre los principales hallazgos destaca la dependencia entre la Intención Emprendedora y el resto de los factores propuestos por Azjen (1991). Aunque la intención

empresadora es moderada, la participación en programas de educación al emprendimiento aumenta tanto su predisposición al trabajo por cuenta propia como el sentimiento de control para afrontar con éxito ese escenario. Asimismo, se evidencia que el riesgo percibido y la confianza sobre sus capacidades son los principales frenos. Las implicaciones prácticas de esta investigación se dirigen a universidades interesadas en el diseño de programas efectivos en materia de creación de empresas.

Abstract:

This paper aims to show the efficacy of designing entrepreneurship education programs on Entrepreneurial Intention in undergraduates. Theory of Planned Behavior (TPB) is the support to analyze how Personal Attitudes, Social Norms and Perceived Behavioral Control affect on Entrepreneurial Intention. Regression analysis is applied with a sample of 1.511 students from University of Málaga in three waves; each one is an academic year. A filter is proposed: the participation in entrepreneurship education programs (specific subject or technical seminars/workshops regarding encouragement of entrepreneurship), moreover a control group with students non-participants in any EEP is composed. The main finding is the dependence between Entrepreneurial Intention with all other factors from Azjen model (1991). Although Entrepreneurial Intention is moderate in undergraduates, participation in entrepreneurship education programs increases. On one side, regarding their predisposition to have a business, on the other giving to the students confidence to face any upcoming challenge. Therefore, perceived risk and trust on their entrepreneurial skills affects adversely. The Practical implications are focused on Universities which are interested in designing efficacy programs on venture creation.

Palabras clave: *Teoría del Comportamiento Planificado (TPC), Intención Emprendedora, Emprendimiento, Programas de Educación para el Emprendimiento, Universidad.*

Keywords: *Theory of Planned Behaviour (TCP), Entrepreneurship, Entrepreneurial Intention, Entrepreneurship Education Programs, University.*

1. Objetivos o propósitos:

La finalidad de este trabajo es investigar el impacto de los programas de educación para el emprendimiento en la predisposición de los universitarios a iniciar una actividad empresarial. Partiendo de la Teoría del Comportamiento Planificado (TCP) de Azjen (1991) se demuestra el aumento de la intención emprendedora y el sentimiento de capacidad y confianza en grupos de estudiantes que han participado en acciones específicas de cultura emprendedora. A través de un estudio cuantitativo se encuesta a 1.511 estudiantes en tres oleadas, correspondientes a tres años académicos, separando aquellos que han formado parte de un programa de educación para el emprendimiento y los que no, actuando estos últimos como grupo de control. En definitiva, estudiantes de diferentes áreas de conocimiento de la Universidad de Málaga se indaga sobre la eficacia de los nuevos modelos de formación y la percepción general del emprendimiento como salida profesional y laboral en la mente de los alumnos universitarios.

2. Marco teórico:

En la actualidad, nadie discute el efecto tractor que el emprendimiento ejerce sobre la economía (Audretsch y Thurik, 2001). Esta convicción se ha extendido ampliamente dando como resultado la proliferación de trabajos científicos en este campo y la multiplicación de políticas específicas de apoyo al emprendimiento. La Universidad como agente social dinamizador ha incorporado a sus roles clásicos de investigación y docencia el fomento del espíritu emprendedor (Comisión Europea, 2007). En la última década la concentración de esfuerzos de estas instituciones en esta materia es destacada y, en consecuencia, ha sido objeto de análisis en la literatura reciente. Adicionalmente, el énfasis sobre la gestión de competencias en la educación derivado de la implantación del Espacio Europeo de Educación ha supuesto un cambio de visión sobre el emprendimiento y la incidencia derivada de acciones específicas durante los estudios (Sánchez, 2011). Así, los denominados Programas de Educación para el Emprendimiento (EEP) han adquirido un protagonismo elevado. No obstante, a día de hoy no existe consenso sobre cómo deben ser esos programas para resultar más efectivos (Fayolle y Gailly, 2015) ni siquiera si la educación en sí misma resulta suficiente para explicar la intención emprendedora (Do Paco et al., 2015). A este escenario se suman otras dificultades como la incapacidad de las investigaciones en este campo para predecir si la intención emprendedora medida se convertirá a medio plazo en un negocio (Fayolle y Gailly, 2015). En cualquier caso, la relación entre la educación y la

potenciación del emprendimiento sigue concentrando la atención de numerosos autores (Liñan et al., 2011; Bae et al., 2014; Entrialgo e Iglesias, 2016).

Son numerosos los modelos predictivos propuestos tanto para medir el comportamiento emprendedor como para evaluar la intención emprendedora (Krueger et al., 2000). Incluso algunas aproximaciones se realizan considerando la influencia cultural entre países (Liñán y Chen, 2009) o la multidimensionalidad del conocimiento en torno al hecho de emprender (Urban, 2012). No obstante, destaca la Teoría del Comportamiento Planificado (TCP) de Azjen (1991). Este modelo explica el emprendimiento como un proceso que se genera en el tiempo a partir de tres elementos: las actitudes personales, los apoyos e influencia sociales (Normas Sociales) y la percepción de la capacidad y control sobre la situación concreta de emprender (Control Percibido sobre el Comportamiento). En todo caso, la aplicación de este modelo puede contemplar la influencia de otros factores externos a la persona. Desde la perspectiva de este estudio, los programas de educación para el emprendimiento pueden considerarse un elemento modulador. En base a lo anteriormente expuesto se plantean las hipótesis de trabajo.

H1 Las Actitudes Personales, las Normas Sociales, el Control Percibido del Comportamiento y la Intención Emprendedora están relacionados entre sí.

H2 La Intención Emprendedora tiene una relación de dependencia con:

H2.1. las actitudes personales.

H2.2. las normas sociales.

H2.3. el control percibido sobre el comportamiento.

H3 La participación en programas de educación para el emprendimiento incide positivamente en la Intención Emprendedora

H4 La percepción de solvencia para iniciar una actividad empresarial está influenciada positivamente por la participación en programas de educación para el emprendimiento.

El fenómeno de la intención emprendedora se ha analizado recurriendo a diferentes colectivos pero es muy habitual centrarse en alumnado universitario (Pruett et al., 2009; Liñan et al., 2011; Gasse y Tremblay, 2011; Sensen, 2013; Fenton y Barry, 2014; Iglesias-Sánchez et al., 2016) puesto que este colectivo, se encuentra de forma inminente ante la decisión de orientar su vida

profesional y barajar el escenario de iniciar una actividad empresarial puede tener mayor relevancia. Esta cuestión nos ha llevado a plantear el análisis del impacto de los programas de educación para el emprendimiento recurriendo a estudiantes de diferentes áreas de conocimiento y titulación de una universidad pública del sur de España.

3. Metodología:

3.1. Medidas e Instrumentos

Siguiendo la línea de numerosos trabajos previos en este campo se ha recurrido al modelo de la *Teoría del Comportamiento Planificado* propuesto por Ajzen (1991). El cuestionario se estructura en cuatro bloques: I. Actitudes Personales (PA) integrado por 5 ítems; II. Normas subjetivas (SN) compuesto por tres; III. Control percibido del comportamiento (PCC) con seis; y IV. Intención Emprendedora (EI), medido con otros 6 ítems. Todas las variables se miden con una escala de Likert de 7 puntos.

3.2. Recolección de Datos

El trabajo de campo se ha desarrollado con muestras de alumnos que hubieran participado en programas de educación para el emprendimiento en tres cursos académicos sucesivos (2013/2014; 2014/2015; 2015/2016). En este sentido, se introduce una perspectiva histórica del fenómeno. Los 1.511 estudiantes de la Universidad de Málaga tenían que estar relacionados con algún programa de educación al emprendimiento, bien cursando una asignatura específica de creación de empresas o, en su defecto, habiendo participado en alguna acción de fomento del espíritu emprendedor. Se ha optado por un cuestionario distribuido tanto físicamente como a través del campus virtual durante los períodos lectivos referidos. Asimismo, salvando una de las deficiencias identificadas en la literatura previa, se han incluido recién titulados que estuvieran realizando un máster o el doctorado. Para poder concluir sobre la efectividad de los programas de educación al emprendimiento se hizo necesario plantear un grupo de control compuesto por 413 alumnos.

A nivel metodológico, tanto la identificación de un grupo de control como la aplicación del análisis durante tres cursos académicos aportan robustez y solidez explicativa al modelo. Se trata de tres grupos que aunque parecidos en cuanto a número de alumnos y

características están diferenciados por el momento histórico. Esta cuestión permite que solo presenten resultados que alcancen niveles de significación suficientes así como que funcionen en todos los grupos.

3.3. Validez y confianza

Se analiza la consistencia interna y validez de la herramienta propuesta aplicando un Alfa de Cronbach para todos los factores. Se comprobó que este coeficiente superaba el 0,88 tanto de forma agregada como diferenciando cada uno de los bloques: PA, SN, PBC, IE en los tres cursos académicos.

Tabla 1. Test de fiabilidad

Curso académico	Alpha Cronbach
2013/2014	,93
2014/2015	,919
2015/2016	,866

3.4. Análisis multivariante

La finalidad del trabajo es identificar la influencia entre la orientación hacia el emprendimiento y los factores propuestos en el modelo TCP con lo que se ha optado por un análisis de regresión. Este tipo de análisis permite comprobar la relación entre variables predictoras y la variable independiente, en este caso, la Intención Emprendedora (Hair et al., 1999).

La contrastación empírica del modelo es más sólido puesto que tanto las variables independientes como dependientes son puestas a pruebas en el análisis de regresión diferenciando tanto el grupo de control como la repetición de observaciones en tres momentos históricos diferenciados (tres cursos académicos).

4. Resultados y Análisis

4.1. Análisis Descriptivo: perfil demográfico

Antes de entrar en el detalle de las relaciones entre variables y su significación sobre la población se realiza un análisis descriptivo de la muestra, compuesta por 1.511 alumnos

de la Universidad de Málaga, para aportar una visión general sobre su composición. Se desagregan los diferentes aspectos respecto al curso académico así como si se trata sobre la muestra o el grupo de control (Tabla 2).

Tabla 2. Factores Demográficos de la muestra

Factor		Curso 13/14		Curso 14/15		Curso 15/16	
		Sample 382	EEP: Control Group: 140	Sample 402	EEP: Control Group: 155	Sample 416	EEP: Control Group: 116
Género	Hombre	44,5	46,8	41,0	40,6	46,8	52,6
	Mujer	55,5	53,2	59,0	59,4	53,2	47,4
Titulación	Telecomunicaciones / Informática	4,2	1,4	6,0	3,9	11,7	11,2
	ETSI Industriales	5	0	4,7	1,3	,3	,0
	Ciencias	3,7	0	9,2	3,9	6,0	1,7
	Marketing e Investigación de Mercados Económicas y Empresariales	55,5	68,1	43,5	47,1	67,7	78,4
	Relaciones Laborales	7,3	8,5	3,0	2,6	7,0	5,2
	Derecho	6,8	10,6	2,2	3,9	,9	,9
	Ciencias de la Comunicación	5,8	2,8	12,9	12,3	3,8	2,6
	Turismo	5,2	7,8	18,4	25,2	2,5	0,0
	Otras titulaciones	6,5	0	0	0	0	0
Curso	1º	22,8	61	7,2	17,4	22,5	31,0
	2º	14,1	39	13,9	33,5	21,2	32,8
	3º	17,8	0	45,5	48,4	18,4	21,6
	4º	28,5	0	33,3	,6	33,9	9,5
	Master/Doctorado	21,1	0	0	0	4,1	5,2
Nacionalidad	Española	89	87,2	92,5	92,3	89,2	89,7
	No española	11	12,8	7,5	7,7	10,8	10,3

Conforme ilustra la tabla, la distribución por género del estudio está muy equilibrada y es coherente con la representación de mujeres y hombres en el conjunto de la Universidad de Málaga.

En cuanto a las titulaciones universitarias, se han priorizado aquellos grados en los que existía una asignatura específica de creación de empresas o similar pero también se han incluido otras titulaciones con el ánimo de establecer comparaciones sobre la orientación de la titulación en su conjunto y de la preparación de orientación al emprendimiento que se introduce en ellas. Las titulaciones con mayor porcentaje de representación son las impartidas en la Facultad de Comercio y Gestión así como las de la Facultad de Ciencias Económicas y Empresariales

Respecto a los cursos, destaca que la representación mayor se concentre en alumnos de últimos cursos o cursando un máster o posgrado antes de incorporarse al mercado laboral. Ha querido concederse más peso a los últimos niveles de la vida universitaria puesto que se entiende será el momento natural en el que se hará necesario plantearse más los escenarios de futuro: trabajo por cuenta ajena o inicio de una actividad empresarial. En contraposición, en los grupos de control la máxima representación la ostentan alumnos de los primeros dos cursos. Conviene señalar dos aspectos, el primero, las asignaturas de creación de empresas, obligatorias en la mayoría de los grados seleccionados para la muestra explica esta concentración. Por otro lado, respecto al grupo de control destaca que primer curso académico contemplado en el estudio, todos sus componentes eran de 1º o 2º; en las siguientes dos oleadas se aprecia una tendencia a la dispersión, quizás por la mayor difusión y participación en programas de apoyo al emprendimiento fuera de las asignaturas obligatorias de creación de empresas.

Inicialmente se consideró relevante incorporar la variable de la nacionalidad pero la distribución de la muestra no es muy equilibrada en este aspecto. En todo caso, representan niveles similares a la presencia de estudiantes de otras nacionalidades en el conjunto de la Universidad de Málaga.

4.2. Análisis Descriptivo: Variables Principales

A continuación se realiza un análisis de los bloques del cuestionario que representan cada uno de los elementos determinantes de la Teoría del Comportamiento Planificado: Actitudes Personales (PA), Normas Sociales (SN), Control del Comportamiento Percibido (PBC) e Intención Emprendedora (EI).

Conforme a los datos recogidos en la Tabla 3 el total de las medias de Actitudes Personales supera ligeramente el 5 en los dos primeros años mientras que en el último curso del análisis la media se queda en 4,24. Destacamos las afirmaciones cuya media es más elevada <Si tuviera la oportunidad y los recursos me gustaría emprender mi propio negocio> (PA3) y <Convertirme en empresario conllevaría una gran satisfacción para mí> (PA4). Asimismo, los ítems con una media más baja reflejan la existencia de ciertas dudas tanto sobre las implicaciones positivas de ser emprendedor (PA1) y la valoración sobre ser emprendedor como una de las opciones que se barajan en la mente de los universitarios (PA5). Del análisis se deriva un cruce interesante entre el valor de PA3 y el PA1. En este sentido, si la percepción del riesgo es menor porque se dispone de los recursos suficientes, la oportunidad parece más clara a los universitarios y, por tanto, estarían más predispuestos a emprender. En cambio, si piensan en el emprendimiento de forma general perciben de esta opción más desventajas que ventajas.

Tabla 3. Actitudes personales

Cod.	Pregunta	2013/2014			2014/2015			2015/2016		
		Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha
PA1	Emprender y convertirme en empresario/a implica más ventajas que desventajas	4,68	1,341	.96	4,92	1,272	.86	3,64	2,238	.921
PA2	Desarrollar mi carrera como empresario/a es atractivo para mí	5,07	1,547		5,44	1,290		4,06	2,510	

PA3	Si tuviera la oportunidad y los recursos, me gustaría emprender mi propio negocio	5,41	1,561		5,73	1,324		4,35	2,662
PA4	Convertirme en empresario/a conllevaría una gran satisfacción para mí.	5,35	1,59		5,90	1,141		4,22	2,564
PA5	Entre las opciones, me gustaría ser emprendedor.	4,96	1,585		5,39	1,239		4,96	1,552
Total de Medias		5,09			5,47			4,24	

El indicador Normas Sociales detecta las fuentes de influencia sobre el emprendimiento de los universitarios desde su entorno más cercano. Se incluyen en el cuestionario tres niveles de sus grupos de pertenencia: la familia, amigos y compañeros. La media de los tres ítems para los tres cursos académicos supera el 5 lo que refleja la percepción de un apoyo aceptable si optaran por iniciar una actividad empresarial. Los padres y núcleo familiar más cercano son los que proporcionan un valor más alto, seguido de los amigos (Tabla 4).

En todo caso, este indicador es el único cuyos valores de confiabilidad (Alpha de Cronbach) son más bajos. En el curso académico 2013/2014 se queda próximo al valor de referencia pero no lo supera, los dos cursos académicos sucesivos obtienen valores muy ajustados al 0,8.

Tabla 4. Normas Sociales

Cod.	Pregunta	2013/2014			2014/2015			2015/2016		
		Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha
SN1	Tu familia más próxima y directa	5,51	1,461	.78	5,57	1,272	.823	5,58	1,330	0,8
SN2	Tus amigos	5,47	1,327		5,45	1,457		5,83	1,105	
SN3	Tus compañeros	5,29	1,376		5,70	1,318		5,51	1,274	
Total de Medias		5,09			5,58			5,64		

En el modelo TCP el Control Percibido del Comportamiento resulta un elemento clave para cuya medición se utilizan 6 ítems y en la muestra de los diferentes cursos académicos se obtiene la media más baja de todos los indicadores. Todos los valores se encuentran por encima de 3,50 pero no alcanzan el 4,6 lo que reflejaba un acuerdo moderado. Se presentan los resultados en la Tabla 5. Aunque en términos generales, el alumnado de la universidad de Málaga no se considera preparado para ser emprendedor y abordar las cuestiones previas para ello: desarrollar el plan de empresa, definir su proyecto empresarial, conocer los detalles y fases del proceso de creación de empresas... Se constata una diferencia interesante en este bloque respecto a los grupos de control puesto que los valores para este bloque son más bajos aún. En este sentido, los estudiantes no tienen una percepción de poseer conocimientos suficientes para afrontar con éxito el inicio de una actividad empresarial pero esta percepción e inseguridad se refleja en valores más bajos si no han participado en programas de educación al emprendimiento. En la tabla 6 se presenta la media del factor Control Percibido del Comportamiento para los estudiantes que han participado en EEP y los grupos de control.

Tabla 5. Control Percibido del Comportamiento

Cod.	Pregunta	2013/2014			2014/2015			2015/2016		
		Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha
PBC1	Constituir mi empresa y trabajar sobre mi proyecto empresarial sería fácil para mí.	3,9	1,52	.096	4,34	1,476	.878	4,38	1,516	.880
PBC2	Yo estoy preparado/a para poner en marcha una empresa viable.	3,77	1,568		4,28	1,396		3,84	1,697	
PBC3	Tengo conocimientos suficientes sobre el proceso de creación de una nueva empresa.	3,64	1,578		4,06	1,362		4,03	1,799	
PBC4	Conozco los detalles prácticos necesarios para poner en marcha un negocio.	3,51	1,545		3,92	1,413		4,14	1,752	
PBC5	Sé cómo elaborar mi proyecto empresarial.	3,63	1,628		4,56	1,563		4,28	1,709	
PBC6	Si yo pusiera en marcha mi empresa, tendría muchas probabilidades de éxito.	3,91	1,487		4,54	1,327		4,44	1,541	
Total de Medias		3,72			4,28			4,18		

Tabla 6. Comparación PBC entre estudiantes participantes en EEP
y Grupos de Control

Curso académico	Estudiantes EEP	Grupo Control
2013/2014	3,72	3,59
2014/2015	4,28	4,12
2015/2016	4,18	3,48

Por su parte, el indicador Intención Emprendedora, compuesto por seis ítems, alcanza una media superior a 4 en las tres oleadas, lo que implica una predisposición moderada al trabajo por cuenta propia (Tabla 7). En cambio, conviene destacar que el ítem referido al deseo de poner en marcha su empresa algún día (EI6) se acerca al 5 lo que puede significar que es una opción interesante pero proyectada a medio o largo plazo en general para este colectivo. Esta afirmación se puede ver soportada con el ítem que alcanza una media inferior (3,93) <estoy listo para convertirme/ <ser emprendedor> (EI1). La convicción sobre ser emprendedor es moderada y aunque se vislumbra como una opción futurible queda muy lejos de mostrar un perfil de universitarios predisuestos al emprendimiento. La relación con el indicador anterior, Control del Comportamiento Percibido, también con una media baja puede guardar una relación con los valores obtenidos en este último bloque (EI). En definitiva, la diferencia en la percepción sobre la preparación para afrontar el posible reto de emprender permite validar la hipótesis 4.

Tabla 7. Intención emprendedora

Cod.	Pregunta	2013/2014			2014/2015			2015/2016		
		Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha	Media	Desv. típ.	Cronbach Alpha
EI1	Estoy listo para convertirme ser emprendedor.	3,76	1,572	.95	4,14	1,374	.918	3,91	1,671	.925
EI2	Mi objetivo profesional es convertirme en empresario/a.	4,34	1,831		4,79	1,676		4,33	1,736	
EI3	Yo hare todos los esfuerzos necesarios para montar mi empresa y desarrollar mi negocio.	4,43	1,761		4,88	1,654		4,41	1,679	
EI4	Estoy convencido a crear mi empresa en el futuro.	4,16	1,731		4,72	1,549		4,22	1,738	
EI5	Tengo el pensamiento firme de poner en marcha una empresa.	4,03	1,758		4,75	1,642		4,20	1,814	
EI6	Quiero poner en marcha mi empresa algún día.	4,68	1,811		5,58	1,521		4,71	1,734	
Total de Medias		4,23			4,81			4,29		

Dado que este trabajo se centra en analizar el efecto de los programas de educación al emprendimiento en la Intención Emprendedora se ha extraído la media del bloque EI para los dos grupos de estudiantes en las tres oleadas. En la Tabla 8 se aprecia la diferencia de la media para el conjunto de variables que conforman el indicador EI. En este sentido, la incidencia de las acciones de fomento del espíritu emprendedor acometidas por la Universidad queda constatada si bien la diferencia es de +/-0.20. Los resultados permiten confirmar lo planteado en la hipótesis 3.

Tabla 8. Comparación EI entre estudiantes participantes en EEP
y Grupos de Control

Curso académico	Estudiantes EEP	Grupo Control
2013/2014	4,29	4,12
2014/2015	4,81	4,64
2015/2016	4,29	4,02

4.3. Análisis estadístico multivariante: Regresión Múltiple

Como ya se indicó, se ha optado por una regresión dada su versatilidad para identificar modelos de comportamiento de variables independientes (predictores) y una variable criterio (Hair et al., 1999). Basándonos en el modelo de Azjen (1991) se plantea como variable dependiente la Intención Emprendedora (EI) y variables independientes: Actitudes Personales, Normas Sociales y Control Percibido del Comportamiento.

La variable dependiente y las independientes se miden con valores comprendidos entre 1 y 7. Adicionalmente, la muestra consiste en repetir las observaciones en tres oleadas, cada una de ellas corresponde a un curso académico.

Todos los datos han sido procesados usando el programa SPSS 20. Un análisis de fiabilidad y confianza de los datos es aplicado previamente. Se comprueba que tanto de forma conjunta como separando cada bloque los valores exceden el 0.8 necesario para el Cronbach's α , por lo tanto se demuestra la validez interna del cuestionario.

La tabla 9 recoge los resultados del análisis de regresión, se evidencia el papel que juega cada uno de las variables predictoras (AP, SN, PBC) sobre la Intención Emprendedora (EI).

Tabla 9. Regresión de la Intención Emprendedora

Modelo	2013/2014		2014/2015		2015/2016	
	Standardized Coefficients	Sig.	Standardized Coefficients	Sig.	Standardized Coefficients	Sig.
	Beta		Beta		Beta	
(Constante)		0,00		,000		,000
PA	0,16	0,00	0,14	0,36	0,13	0,3
SN	0,00	0,44	0,02	0,01	-0,01	0,2
PBC	0,05	0,34	0,1	0,21	0,07	0,36

a. Dependent Variable: EI

El análisis de regresión evidencia la relación significativa entre las variables del modelo de Azjen (Actitudes personales, Normas Sociales y Percepción del Control de Comportamiento) explicando en un 71% la Intención Emprendedora, si tomamos el RSquare de cada oleada (74%, 78,6% y 62,3%). La tabla nos permite profundizar sobre el peso desagregado de cada uno de ellos, observando que las Actitudes Personales (PA) y la Percepción del Control del Comportamiento (PBC) son los que tienen un mayor poder explicativo. Las Normas Sociales de forma independiente no son tan significativas para explicar la Intención Emprendedora. En todo caso, las tres dimensiones de forma agregada si tienen poder suficiente para soportar el modelo propuesto y, en consecuencia, la hipótesis 1 queda confirmada para el colectivo de la Universidad de Málaga objeto del análisis.

La tabla 10 recoge las correlaciones positivas entre las dimensiones del modelo de Azjen aplicado a la comunidad universitaria de Málaga. Todas las variables presentan relaciones significativas cuyo valor más bajo corresponde a las Normas Sociales y las Actitudes Personales con la puntuación más alta.

Las correlaciones son coherentes con los resultados del análisis de regresión puesto que las relaciones significativas más fuertes con la Intención Emprendedora (EI) también se producen con Actitudes Personales (PA) y el Control Percibido del Comportamiento (PBC) con la Intención Emprendedora. En cierta medida, estas relaciones muestran la

estructura de influencia y su incidencia sobre la variable criterio (EI), validándose la hipótesis 2 y sus sub-hipótesis. En todo caso, conviene afirmar que la influencia sobre la Intención Emprendedora requiere de la conjunción de los tres bloques de variables propuestos por el modelo TCP. El modelo tiene un poder explicativo suficiente si contempla de forma agregada las tres dimensiones (PA, SN y PBC), por el contrario, de forma desagregada se refuta la relación directa y el poder predictivo significativo sobre la Intención Emprendedora. Esta cuestión cobra importancia si nos centramos en las Normas Sociales puesto que de forma independiente no alcanzan el poder explicativo suficiente. Esta evidencia coincide con los resultados de la literatura previa y viene a plantear que las características personales y la percepción de capacidad y control de la situación son más determinantes mientras que el apoyo social es un facilitador o potenciador de la decisión de emprender pero no constituye por sí solo una motivación.

Tabla 10. Análisis de Correlaciones

	Intención Emprendedora			Actitudes Personales			Normas Sociales		
	2013/2014	2014/2015	2015/2016	2013/2014	2014/2015	2015/2016	2013/2014	2014/2015	2015/2016
Intención Emprendedora	1	1	1						
Actitudes Personales	0,816**	,680**	,323**	1	1				
Normas Sociales	0,283**	,320**	,130*	0,302**	,307**	0,106		1	1
Control Percibido del Comp.	0,551**	,589**	,492**	0,433**	,199**	,181**	,319**	,263**	,167**

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

5. Discusión y conclusiones

Conforme a los resultados, los programas de educación para el emprendimiento tienen un efecto moderado sobre la Intención Emprendedora, lo que coincide con lo aportado por la literatura previa (Gasse y Tremblay, 2011; Liñan et al., 2011; Fenton y Barry, 2014; Bae et al., 2014; Zhang et al., 2014; Westhead y Solesvik, 2016; Entrialgo y Iglesias, 2016; Maresch et al., 2016) así

como en las estadísticas presentadas anualmente (GEM, 2016). Proponer una perspectiva histórica que incluye tres cursos académicos así como plantear un análisis de la Intención Emprendedora diferenciando a los estudiantes que hubieran participado en algún programa de educación al emprendimiento y aquellos ajenos a esta actividad (grupo de control) añade solidez a las conclusiones de esta investigación y resuelve una limitación identificada en otros trabajos previos de características similares (Joensuu et al., 2013; Zhang et al., 2014; Fayolle y Gailly, 2015).

Las actitudes personales y el control percibido del comportamiento son los dos factores que ejercen mayor influencia sobre la Intención Emprendedora, mientras que las normas sociales afectan de forma menos significativa. En este sentido, el apoyo ejercido por el entorno cercano actúa como un aliciente o un elemento disuasorio pero no resulta tan determinante. En todo caso, esta cuestión podría analizarse bajo una perspectiva cultural y podrían establecerse comparaciones que dieran soporte a las diferencias de peso entre colectivos y/o áreas geográficas (Pruett et al., 2009; Gasse y Tremblay, 2011; Solesvik et al., 2014). La importancia relativa de cada uno de los factores del modelo de Azjen (1991) coincide también con los resultados extraídos en trabajos previos como Iglesias-Sánchez et al., 2016 y Entrialgo et Iglesias, 2016. Por su parte, los valores del control percibido del comportamiento nos invitan a indagar en futuras investigaciones sobre qué enfoques metodológicos, herramientas y contextos de aprendizaje serían más idóneos para que los programas de educación al emprendimiento. De este modo, se podría incidir de forma más efectiva sobre la percepción de confianza y control ante la situación de emprender. En una línea similar, estas reflexiones han sido planteadas por trabajos como el de Fayolle y Gailly (2015). Por su parte, la importancia de las actitudes personales sobre la intención emprendedora encuentra apoyo en aquellos trabajos que ponen énfasis en la personalidad y los rasgos del emprendedor (Zhao et al., 2011 y Sensen, 2013).

En todo caso, este trabajo no está libre de limitaciones procediéndose a continuación a identificarlas y relacionarlas con futuras líneas de investigación. Desde un punto de vista teórico, se ha optado por la Teoría del Comportamiento Planificado de Azjen (1991), si bien este modelo está ampliamente validado para el estudio de la Intención Emprendedora, da una visión concentrada sobre el fenómeno que no contempla otros factores (Turker y Selcuck, 2009). Variables relativas al contexto del emprendedor, al apoyo institucional de la Universidad y las políticas de apoyo al emprendimiento. Todas ellas cuestiones que podrían ampliar el alcance de los resultados en futuras investigaciones. Adicionalmente, el análisis diferenciado del impacto sobre la Intención Emprendedora de los programas de educación al emprendimiento en los que el

alumno participa voluntariamente respecto a aquellos que son materia obligatoria durante el grado podría resultar clave para explicar el efecto moderado. Por otra parte, aunque el impacto de la educación para el emprendimiento queda constatado en la educación superior sería necesario profundizar sobre qué herramientas y enfoque pedagógico que garantice mejores resultados. Respecto al diseño metodológico, hemos recurrido a estudiantes de la Universidad de Málaga con lo que una ampliación de la muestra incluyendo estudiantes de diferentes países y tipo de universidad permitiría hacer comparativas y extraer conclusiones más completas. En todo caso, se subraya como fortaleza la composición de la muestra incluyendo alumnos de diferentes áreas de conocimiento, cursos así como, la ya comentada, perspectiva histórica y la elección de los grupos de control para evitar que los resultados fueran aislados y no generalizables.

6. Resultados y/o conclusiones:

Basándonos en los resultados del análisis de regresión, la conclusión principal es el efecto positivo entre los programas de educación al emprendimiento y la intención emprendedora. Este tipo de programas consiguen por un lado aumentar la motivación hacia el emprendimiento así como incluir entre las opciones de desarrollo profesional el inicio de una actividad económica por cuenta propia. Por otro lado, la participación en estas actividades aporta al alumnado una mayor seguridad sobre los conocimientos, capacidades y confianza necesaria para sentirse más seguro ante ese escenario. Las diferencias en los tres cursos académicos y respecto al grupo de control son moderadas pero significativas estadísticamente con lo que nos permiten validar las hipótesis de trabajo planteadas.

El desarrollo de este trabajo nos permite confirmar a las Universidades que la concentración de esfuerzos para potenciar el espíritu emprendedor está siendo efectiva pero es necesario profundizar tanto en el enfoque de los programas de educación al emprendimiento como en el seguimiento de cuántas de las intenciones emprendedoras medidas se traducen en una empresa una vez concluyen sus estudios.

7. Contribuciones y significación científica de este trabajo:

Este estudio contribuye al campo de la educación al emprendimiento reforzando su papel en el ámbito universitario ya que la intención emprendedora se potencia gracias al diseño e implantación de estas acciones. Si bien el efecto sigue siendo moderado se evidencian diferencias

significativas entre los participantes en programas de educación al emprendimiento y aquellos que no se ven inmersos en estas actividades. En todo caso, se comprueba que hay relaciones complejas y es necesario seguir trabajando para identificar qué elementos deben contemplarse en los EEP para que resulten más efectivos. Los resultados refrendan lo planteado en la literatura previa al mismo tiempo que ponen énfasis en la necesidad tanto de apoyar a las Universidades en la dirección de sus políticas de fomento del emprendimiento como de facilitar a los profesores herramientas y enfoques pedagógicos que les garanticen resultados superiores trabajando el emprendimiento como competencia y como escenario de futuro para sus estudiantes. Por último, este trabajo subraya la necesidad de generar en los estudiantes confianza y control sobre la percepción de éxito si realmente se desea que el trabajo por cuenta propia sea una salida laboral para los universitarios. Al margen de las contribuciones de este estudio, resulta necesario continuar el debate sobre cómo la intención emprendedora puede ser potenciada desarrollando programas de educación al emprendimiento.

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INTERDISCIPLINARY ACTIVITIES AND ENTREPRENEURIAL INTENTIONS

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Abstract

Drawing on Ajzen's (1991) theory of planned behaviour and entrepreneurship education (EE) theory, this article examines the role of interdisciplinary activities, i.e. activities in which students from different profiles and study fields are mixed, and their influence on students' entrepreneurial intentions. This article addresses the scarcity of research on the relative effectiveness of different academic institutions' actions promoting entrepreneurship in developing students' entrepreneurial intentions.

Based on survey data collected from 859 business school students and a structural equation modelling, we provide empirical evidence of differences in the impact of interdisciplinary activities on students' entrepreneurial intentions formation depending on activity characteristics and also students' educational stage and gender.

The results have important implications for educational practice as well as for public and private organizations interested in promoting entrepreneurship.

Keywords: interdisciplinary activities; entrepreneurial intentions; entrepreneurship education; learning

1. Introduction

The single best predictor of actual entrepreneurship is the entrepreneurial intention (Krueger, Reilly, and Carsrud 2000) and it is important to understand the way in which young people form their entrepreneurial intentions since they are the entrepreneurs of the future. Entrepreneurial education (EE) has proliferated in the last years and there is a need to better understand the impact of academic institutions' actions promoting entrepreneurship on students' entrepreneurial intentions (Liñán, Urbano, and Guerrero 2011).

We investigate one type of academic activity that has been under-examined by previous literature: interdisciplinary activities, i.e. activities in which students from different profiles and career fields of interests are mixed. Entrepreneurship is an act of creativity (Amabile, 1996; Nyström, 1993; Ward, 2004) and previous research finds that disciplinary group diversity stimulates creativity and innovation (Gardenswartz, 1994; Jackson, 1996; Paulus, 2000; Bassett-Jones, 2005; Alves et al. 2007). Accordingly, we expect that participation in activities where different profiles are mixed will be beneficial for the formation of students' entrepreneurial intentions. In particular, we examine the relative efficiency of interdisciplinary activities in developing students' entrepreneurial intentions and the potential differences in the impact on entrepreneurial intentions depending on the educational stage.

Our results have important implications for academic institutions offering entrepreneurship courses and interested in promoting students' entrepreneurial intentions. In particular, our results suggest that activities should be strategically distributed at different educational stages to obtain the maximum impact on students' entrepreneurial intentions. Results also suggest that short-duration highly-intensive activities, with ludic and fun character and involving competition among students should be combined with longer but intensive activities, such as real-life projects with companies, in particular at late educational stages. Other stakeholders, including partners of academic institutions and organizations providing them with financial support to promote entrepreneurship may also find our research valuable.

2. Theoretical Framework and Hypotheses

Intentions play a crucial role in the decision to start a new firm (Bird, 1988) and the best-established intention-based model to study entrepreneurial intentions is the theory of planned behavior (TPB), extensively used in research on entrepreneurship (Kolvereid, 1996; Krueger & Carsrud 1993; Liñán & Chen 2009; Liñán et al., 2011; Rauch & Hulsink, 2015). The TPB helps explain and predict entrepreneurial intentions by taking into account personal and social factors.

The TPB states that planned behaviors (such as starting a business) are intentional and thus are predicted by intentions toward that particular behavior (Souitaris, Zerbinati and Al-Laham 2007).

According to the TPB, entrepreneurial intentions (EI) are directly influenced by three elements or antecedents: (1) Entrepreneurial personal attitude (PA), which refers to the degree of attraction towards entrepreneurship, and depends on

expectations about personal impacts of outcomes resulting from being entrepreneur (Krueger, Reilly, and Carsrud, 2000); (2) Entrepreneurial perceived behavioral control (PBC), which refers to the perceived ability to become an entrepreneur, that is, how confident one feels when developing the entrepreneurial behaviour (Krueger, Reilly, and Carsrud, 2000; Moriano, 2005), it overlaps Bandura's (1997) self-efficacy and; (3) Perceived subjective norms (SN), which refers to the perceptions of what "reference people" think about respondents firm-creation decision and captures the influence of society on the individual entrepreneurial intentions (Ajzen, 1991).

In general, results from previous empirical research support the TPB, in particular regarding the impact of PA and PBC on entrepreneurial intentions (Armitage and Conner, 2001; Rauch and Hulsink, 2015). However, a number of studies find very weak influence of SN on entrepreneurial intentions (Autio et al., 2001; Krueger, Reilly, and Carsrud, 2000).

According to the TPB, exogenous factors (such as age, gender, role models or labor experience, skills or role models) also influence entrepreneurial intentions through the three antecedents listed above (Boyd and Vozikis 1994; Lee and Wong 2004; Liñán and Chen, 2009, Liñán, Urbano and Guerrero, 2011).

We use the TPB and teaching models in EE to examine the impact of the participation in interdisciplinary activities on students' EI. Following previous studies that use the TPB model as well (Liñán, Urbano and Guerrero, 2011; Fretschner & Weber, 2013), we argue that perceived approval by referent others (SN) is positively related to perceived attractiveness (PA) and perceived control over the behavior (PBC). The expected support is perceived as an external confirmation that important others see

entrepreneurship as a career option fit for the respondent, and one for which s/he is able. This external support, thus, serves to reinforce personal perceptions. To empirically confirm the functioning of the model with our data, we propose the H1 set of hypotheses.

H1: the data confirms the functioning of the TPB model:

H1a: Entrepreneurial PA has a positive and significant impact on entrepreneurial intentions.

H1b: Entrepreneurial PBC has a positive and significant impact on entrepreneurial intentions.

H1c: SN has a positive and significant impact on entrepreneurial intentions.

H1d: SN has a positive and significant impact on entrepreneurial PA.

H1e: SN has a positive and significant impact on entrepreneurial PBC.

2.1. Interdisciplinary diversity and entrepreneurship

The benefits of diversity have long been acknowledged in a variety of environments (e.g. Boone & Hendricks, 2009; Naranjo-Gil, Hartmann, & Maas, 2008; Nielsen, 2010, Mannix & Neale, 2005 in the workplace or Johnson, Schnatterly, & Hill, 2013 in corporate boards). For example, research in organizational performance finds that the advantages of diversity include increased creativity and innovation (Bassett-Jones, 2005; Millikens & Martins, 1996; Richard, 2000) and increased productivity (Joshi, Liao, & Jackson, 2006).

An overwhelming majority of studies in the EE literature report a positive impact of EE on entrepreneurial self-efficacy (Segal, Schoenfeld, & Borgia, 2007;

Zhao et al., 2005). However, there is surprisingly scant literature examining the potential influence of diversity on entrepreneurial self-efficacy and intentions. In one related study, Zhao et al. (2005) show that the development of self-efficacy is promoted by a diversity of learning experiences in entrepreneurship courses. In a longitudinal analysis, Barakat et al. (2010) analyze the impact of an entrepreneurship program on students' entrepreneurial self-efficacy and the differences between students, depending on their disciplines over time. They show that the diversity of students and the interactions between time and gender as well as discipline and time led to different entrepreneurial self-efficacy effects.

Many educational studies have documented the benefits of diversity on different measures of academic performance (Chang, 1999, 2001; Chang, Astin, & Kim, 2004; Chang, Denson, Saenz, & Misa, 2006; Gurin, Dey, Hurtado, & Gurin, 2002; Hansen et al., 2015; Hu & Kuh, 2003; Hurtado, 2001; Jayakumar, 2008; Kuklinski, 2006; Milem, 2003; Pascarella et al., 1996; Pascarella & Terenzini, 2005; Loes et al., 2012). However, these studies mostly focus on race, ethnic and gender differences as the main source of diversity, while other important dimensions of diversity such as differences in profiles and study fields (i.e. interdisciplinary diversity) are under-explored.

Previous research suggests that exposure to diversity might promote the development of more complex forms of thought (e.g. Gurin et al., 2002; Loes et al. 2012) such as the capability to think critically, and some studies find a positive association between critical thinking and self-efficacy (Bandura, 2001; Zulkosky, 2009; Greene et al. 2008).

Entrepreneurship has long been acknowledged as an act of creativity (Amabile, 1996; Nyström, 1993; Ward, 2004) since it involves the creation of a new firm to pursue an opportunity and all activities and actions associated with opportunity detection and the creation of firms to pursue them (Bygrave and Hofer, 1991). A creative classroom environment has been shown to be critical for student's propensity to engage in creative acts (De Souza Fleith, 2000; King Mildrum 2000).

Grounded in interactional psychology, the interactionist model of creative behavior by Woodman et al. (1993) in the organizational literature states that individual creativity is a function of antecedent conditions, abilities and cognitive styles, personal attributes including self-esteem, knowledge and motivational factors. As Woodman et al. (1993) put it: "These individual factors are influenced by and influence social and contextual factors. The group in which individual creativity occurs establishes the immediate social influences on individual creativity" (p. 201). Self-esteem is closely related to self-efficacy. Previous research on work groups suggests that creative outcomes are more likely to occur in groups composed by individuals drawn from diverse fields or functional backgrounds (e.g. as King and Anderson, 1990). In line with this, Payne (1990) recognize group functional diversity as one of the crucial factors in creative performance. Andrews (1979) finds a positive association between group diversity and creative performance of R&D teams. Thornburg (1991) also finds empirical evidence of positive association between group diversity and group creativity by offering a setting in which group components can increase their own knowledge by using others as resources. Components do not simply add to their own knowledge but use others' knowledge to boost the value of their own skills. Previous research also suggests that, to enhance

idea generation, group cognitive diversity is critical (Paulus, 2000; Jackson, 1996; Gardenswartz, 1994). Alves et al. (2007) also found that disciplinary and functional group diversity stimulates creativity and innovation.

Based on the above theories and empirical evidence, we examine the impact of participation on interdisciplinary activities on students EI. We expect that students' participation in interdisciplinary activities will positively impact individual EI directly and/or indirectly through the three EI antecedents (PBC, SN and PA). For this purpose, interdisciplinary activities are defined as activities in which students with different profiles and career fields of interest are mixed. Thus, based on the interactionist model of creative behaviour and learning theories of EE, we propose the following hypotheses:

H2: participation in interdisciplinary activities has a positive and significant impact on students EI directly and/or indirectly through EI antecedents (PBC, SN and PA)

2.2. Teaching models in entrepreneurship for higher Education

Human beings learn and are taught through an effective combination of external guidance – lecturing, training, coaching, facilitation, instruction, mentoring, etc.– and their own personal experiences. In this vein, there is a critical distinction between learning and teaching processes. While the former shapes an intricate and constant process of incorporating new competencies or strengthening the existing ones, the latter comprises a deliberate pursuit of learning by revealing or instructing such competencies through a teacher-learner relationship (Kozlinska, 2016).

One of the most remarkable models on the field of experiential learning, perhaps the best-developed one is Kolb's (1984) experiential learning theory (ELT). Kolb's model relies on the prior related works of 20th century noteworthy academics (i.e., John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, Carl Rogers and others), which had previously highlighted the key role of experience in the process of human learning (Armstrong & Mahmud, 2008). Under such framework, experiential learning is described as: "the process whereby knowledge is created through the transformation of experience (Kolb, 1984, p. 41). Hence, knowledge arises from the combination of the individual's reflecting, grasping and transforming new and prior experiences.

Kolb and Kolb (2005, p. 193) quote John Dewey's reflection on the need to foster experiential learning in education: "There is a need of forming a theory of experience in order that education may be intelligently conducted upon the basis of experience". This way, Kolb's theory lucidly points out that to become an effective learner a person ought to respect the following process: thinking, feeling, perceiving and behaving. Firstly, the individuals must perceive information and reflect on how it might impact on some aspects of their life. This entails integrating this information with its own experiences and knowledge bases. Following Kolb and Kolb, (2005) individual learning involves more than the mere seeing, hearing, moving, or touching. In other words, it is critical to integrate what the learner senses, and thinks with what he or she actually knows and feels. One of the key features of this learning approach is that "learning results from synergistic transactions between the learner and the environment" (Kolb & Kolb, 2005, p. 194). Thus, learning is a holistic

process of adaption to contextual changes, trends, and circumstances that shape individual experience.

Although abundant research in the field of EE assess the distinct entrepreneurship courses, programs and initiatives offered within the vast diversity of higher education institutions, there is a scarcity of empirical evidence regarding the fit between the pedagogical methods implemented, students' specificities, subjects' contents and institutional constraints (Fayolle, 2013). This entails a necessity to explore and empirically assess these links in depth. Therefore, among the various teaching models –representations of how an education institution addresses its pedagogical approach based on specific goals and objectives (Legendre, 1993)– undertaking EE, this paper aligns with the “teaching models in entrepreneurship for higher education” framework proposed by Béchar and Grégoire (2005; 2007). Bearing in mind its robust pedagogical basis, the teaching models framework stands as a fertile method of classifying EE initiatives. While several studies endorse its practical utility while designing and assessing educational practices, this paper also attempts to endorse its power for empirically testing hypotheses regarding the outcomes linked to distinct EE initiatives.

Concretely, Béchar and Grégoire's (2005) teaching models in entrepreneurship for higher education establishes a distinction between three archetypes –*supply model*, *demand model* and *competence model*–. These three models arise from diverse combinations of operational (i.e., teaching objectives, knowledge emphasized, pedagogical methods and means, assessment method) and ontological dimensions (i.e., philosophical paradigms, theoretical bases, educators' conceptions concerning teaching, themselves, students and about the contents taught).

The *supply model* comprises the theoretical approach to the study of entrepreneurship rather than a practical or applied entrepreneurial preparation. This model is completely teaching-oriented and aims to provide students with a theoretical grasp of the entrepreneurship phenomenon, which normally incurs in students' boredom and demotivation (Fiet, 2000).

As conceived by the creators of this framework, the *demand model* stress the importance of students' learning needs. Concretely, these authors sustain that "just as the supply model focuses on the teaching-side of education, the demand model focuses on answering the learning goals, motives and needs of students" (Béchar and Grégoire, 2005, p. 110). Within this approach, professors bring and encourage students to experience some features inherent to the entrepreneurial process both indoor and outdoor of the classroom context.

Finally, the *competence model* aims to help students develop the entrepreneurial skills required to initiate business ventures. In this model, educators adopt the role of coach, trainer or mentor who enable the students' self-directed, autonomous and experiential learning of entrepreneurship (Müller and Diensberg, 2011). Some of the distinctive training methods shaping this model are the creation of student enterprises, entrepreneurship labs, joint projects with companies, and mentorship programs, among others. Contrasting with the supply model, in the competence model students are indorsed to fail and are stimulated to celebrate mistakes as an exceptional source of learning (Löbler 2006).

Table 1 about here

Table 1 synthesizes the main features and dimensions characterizing each of the three teaching models comprised at Béchard and Grégoire's (2005) framework.

While the supply model adopts a behaviorist standpoint, both the demand and competence models deeply embrace a constructivist approach to EE (Löbner, 2006; Nabi et al., 2016). Behaviorism undertakes learning essentially as the passive transmission of knowledge from educators to students, whilst the constructivist approach postulates that learning encompasses the students' active participation and engagement, becoming, hence, co-creators of new knowledge and insight.

Although it may be legitimately acknowledged the robust explicative power of this model, it remains a simplified representation of reality and hence, it is rather unlikely to find pure supply, demand or competence models in practice (Béchard and Grégoire, 2007). Thus, it is more common to encounter hybrid models (i.e, supply-demand, demand-competence and even supply-competence).

H3: the supply-model activities (group assignment) will have a lower effect on the students than is the case for the demand- and competence-model activities.

3. Learning activities

Regularly, pedagogical methods in EE in higher education still tend to embrace predominantly a behaviorist approach, principally based on lectures, assignments, tests, etc., which ultimately emphasize knowledge acquisition, instead of deeper experience-based approaches characteristic of the constructivist perspective (Nabi et

al., 2016). However, higher education institutions are gradually grasping the necessity of implementing experience-based learning initiatives and have begun to design and include some kind of experiential pedagogic methods within their courses that come to complement the traditional learning approach, where lecture stands as the cornerstone of the learning process (Peris-Ortiz et al., 2016).

The following table comprises a description of the main learning activities under assessment in this study. These activities correspond to the different entrepreneurial learning activities that a French Business School implements to promote students' entrepreneurial vocation.

Table 2 about here

As it may be comprehended from Table 2, apart from the *interdisciplinary group assignment* learning activity, which fits with the supply model, the other learning activities –*Mini-enterprise, Business Game, Project MICE, Design Thinking and Participation in student association with responsibility*– turn out to correspond to demand-competence or competence models.

Therefore, the final research model to be tested is presented in Figure 1

Insert Figure 1 about here

4. Method

Data

We examine a sample of business school students. Samples of students have been extensively examined in the entrepreneurship literature to analyse the formation of EI (Fayolle, Gailly, and Lassas-Clerc, 2006; Kolvereid, 1996; Krueger, Reilly, and Carsrud, 2000; Tkachev and Kolvereid, 1999; Veciana, Aponte and Urbano 2005).

In particular, we analyse students from a French business school highly focused on entrepreneurship. To promote students' entrepreneurial spirit, the school uses many different entrepreneurial learning activities, such as business games competitions or business plan contests, and cooperates with a local business incubator in a variety of activities. Additionally, students at the school can engage in numerous associations ranging from sports, cultural, professional to humanitarian, among others. Students are encouraged to join associations or create their own from their first year at the school. Associations are considered an integral part of the pedagogical program since students obtain academic credits when participating in an association.

The sample includes students from three schools in different fields: the School of Management and Business, the School of Tourism and Leisure Management, and the School of Design. The School of Management and Business offers, among other programs, a Bachelor's in International Management (INBA) and the Grande École Program (PGE, a generalist program in management organized in two parts: a

Bachelor's Degree in Management during the first year, and a Master's Degree in Management the following two years); the School of Tourism offers a Bachelor's (EMVOL) and a Master's (MBATour) in Tourism, Leisure and Travel Management, and the Design School offers a Bachelor's in Graphic Arts and Design.

We administered electronically a questionnaire to students at the end of the second semester (June 2015) and, to obtain the maximum possible number of answers, answering to the questionnaire was made compulsory for students to be able to access their students account in the school intranet during about two months. Students access to their accounts to check for all relevant academic information, including grades and lectures timetables. Compared to voluntary responses, this technique has the advantage of avoiding self-selection problems or non-response bias.

We obtained 859 questionnaires. The respondents were 54.60% female, 38.40% male, their age ranging between 17 and 35 years. Table 3 shows the composition of the sample by program, year and gender. On average, students were 22 years old (standard deviation of 2.5), 72.9% of the sample knew at least one entrepreneur and 87.78% had had some work experience at the moment of the survey. Table 4 shows the number of students per activity and program.

Insert Table 3 about here

Insert Table 4 about here

Measures

We used an adapted version of the *Entrepreneurial Intention Questionnaire (EIQ)* (Liñán, Urbano, and Guerrero 2011). The Appendix shows the items used to measure the variables in the entrepreneurial intention model. The questionnaire, originally in English, was translated into French by teachers at the school that were French native speakers and had extensive experience in giving lectures in English. The questionnaire uses Likert scale items (from 1 to 7) to measure the four central constructs of the Theory of Planned Behaviour (entrepreneurial intention, entrepreneurial personal attraction, entrepreneurial subjective norms and entrepreneurial perceived behavioural control). To deal with problems of response-set bias and the halo effect, items were intermingled and randomly ordered in the questionnaire, as suggested by Liñán, Urbano and Gerrero (2011).

The variables related to learning activities are dummies equal to one if the respondent had participated in them and zero otherwise. With regard to demographic variables, age is measured in years, and the other three demographic variables are dummies taking the value of one if the questionnaire respondent is female (Gender variable), knows personally at least one entrepreneur (Role Model variable) and if the respondent has some work experience (Work Experience variable). Zero means the opposite. The year of the program in which the respondent was registered is also considered.

As a first step, we carried out an exploratory factor analysis on the adapted EIQ items. Using principal components analysis and Varimax rotation with Kaiser

normalization in SPSS software, four factors with eigenvalues greater than 1.0 were extracted. Items 6, 8, and 16, which loaded significantly on two factors were discarded. Then, a confirmatory factor analysis was performed in EQS software for the 17 remaining items. Lagrange multiplier tests were used to identify those items that can be deleted in order to improve model fit. Table 5 presents factor loadings and communalities for the final items, as well as Cronbach's alphas for each factor. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was high (0.849), and Bartlett's test of sphericity was highly significant ($p < 0.001$). Both measures supporting the use of factor analysis with this sample.

Insert Table 5 about here

Evidence of convergent and discriminant validity is given in Table 6 which compares the square root of AVE (average variance extracted) of each factor with the bivariate Pearson correlations of each factor with the other factors. Square root of AVE values greater than 0.7 gave evidence of convergent validity while observing that the correlations between each pair of factors are lower than the square root of AVE gave evidence of discriminant validity.

Insert Table 6 about here

5. Data Analysis

With the purpose of testing the hypotheses, structural equation modeling was performed in EQS, in two steps, as recommended by Anderson and Gerbing (1988): first, the measurement model was estimated in order to confirm validity and reliability, and; second, the structural relations contained in the research hypotheses were tested.

The measurement model was estimated including the following control variables: gender, age, work experience, and role model. Goodness of fit indicators resulted in: Satorra-Bentler scaled chi-square = 220.57 with 55 degrees of freedom and $p < 0.001$; CFI = 0.952; RMSEA = 0.061; all t values for factor loadings were greater than 1.96; standardized factor loadings greater than 0.429; a symmetrical distribution of normalized residuals around zero was observed with no residuals greater than 0.24. These fit indicators account for an approximate fit (Hatcher, 1994; Kline, 2013).

Since all the data were obtained through the same survey instrument, we evaluated if common method bias might be a source of concern. For this, we estimated two measurement models in EQS: one model with all factor loadings according to the result of the factor analysis already explained, and other model adding a common unmeasured factor. Then, we compared the standardized coefficients in both models in order to observe the effect having a common cause explaining all observable measures (Podsakoff et al., 2003). As differences in coefficients were less than 0.2 we conclude that common method bias was not a serious threat in our analysis.

6. Results

For hypotheses testing, we perform a structural analysis for the 1st to 3rd year students and then for 1st, 2nd and 3rd year students separately, as well as for women and men separately in order to explore differences in the impact of learning activities. We decided to discard questionnaires from 4th and 5th year students in the rest of the analysis because all students but 2 in 4th year were INBA students and all students in 5th year were design students (see Table 3). Consequently, a sample of 799 was used from here in the analysis. Figure 2 shows standardized coefficients estimates for the 1st to 3rd year students, controlling for gender, age, work experience, and role model. Goodness of fit indicators resulted in: Satorra-Bentler scaled chi-square = 357 with 149 degrees of freedom and $p < 0.001$; CFI = 0.966; RMSEA = 0.042; all t values for factor loadings were greater than 1.96; standardized factor loadings greater than 0.476; a symmetrical distribution of normalized residuals around zero was observed with no residuals greater than 0.149. Table 7 shows non-standardized path coefficients, t values and significance. Hypotheses H1a, H1b, H1d, and H1e are not rejected while H1c is. The analysis supports the core TPB intentional model, only the relationship between SN and EI is not significant, like in previous research (Autio et al., 2001; Krueger, Reilly, and Carsrud, 2000; Liñán and Chen, 2009).

Insert Figure 2 about here

Insert Table 7 about here

H2 is not supported in this research (Figure 3) since few significant impacts were found when doing the analysis for the whole sample. Moreover, some impacts have negative signs: in particular, having responsibility in an association and group assignment in mixed class impacted negatively ($p < 0.1$) on subjective norms and business game impacted negatively on perceived behavioural control ($p < 0.05$). The only activities with a positive and significant impact were: having worked in associations, with a positive and significant impact on social norms ($p < 0.1$), and business game and design thinking, with a positive and significant impact on entrepreneurial intentions ($p < 0.05$). However, a deeper analysis revealed some interesting patterns: responsibility in associations has always negative impacts while other activities yield both positive and negative impacts depending on the year and gender of students (Figures 4 to 8). Table 8 summarizes these findings and are discussed in detail in the next section.

Insert Figure 3 about here

Insert Figure 4 about here

Insert Figure 5 about here

Insert Figure 6 about here

Insert Figure 7 about here

Insert Figure 8 about here

The support for H3 is only partial. The supply-side activity (group assignment) has negative effects on PBC and SN, in contrast to some of the demand or competence activities, such as Project MICE or Business Game. Nevertheless, there are other activities that may be considered as demand-side and also have negative (responsibility in associations) or no effect at all (Minienterprise or Entreprendre pour Apprendre) over TPB variables. In this sense, it is interesting to note that the most intensive activities seem to provide the highest impact (Business game and Design Thinking), together with a longer but highly embedded activity (Project MICE).

Insert Table 8 about here

7. Discussion

The presence of EE in higher education institutions has significantly increased around the world (Fretschner and Weber 2013), and it is vital to assess the effectiveness of different types of academic practices in encouraging entrepreneurship. The prevalent assumption is that pedagogical endeavours in entrepreneurship will lead to enhanced socio-economic developments through an improved entrepreneurial competence (Kozlinska, 2016). Nevertheless, the extensive literature addressing the influence of EE has not shed sufficient light on the ties shaping the above-mentioned logical sequence, nor on the fundamental drivers of effective interventions. Concretely, this study attempts to fill this gap by distinguishing which interventions exert a higher impact on the students' entrepreneurial intention. To this aim, we base on Béchard and Grégoire's (2005) teaching models in entrepreneurship for higher education framework to test which focus –traditional versus experiential– more significantly influences the distinct constructs shaping the TPB intentional model.

A first remarkable observation is that not all the activities have an impact on components of the TPB intentional model and, when there is an impact, it can be negative, thus rejecting H6. Similarly, the effect of each activity seems to be different depending on the gender or the year the student is taking. Although there may be an error element in these results, we argue that there is a relevant pattern that deserve further analysis.

In the first year, little effects are apparent, and they concentrate on personal attitude. In the second year, several effects are significant, but they are all (but one) negative. Finally, in the third year, the results are mixed, but the more experiential

activities (Project MICE and Business Game) have relevant positive effects. In this sense, some studies (e.g. Tumasjan, Welp and Spörrle, 2013) have found personal attitude to be a stronger influence on intention when the target behavior is distal, while perceived behavioral control is a stronger influence when the target behavior is proximal. In this sense, first year students see themselves as far from actually deciding on their careers, while third year students feel they are closer to that moment.

Regarding the results for first year students, the observed impact of activities is minimal. Only Business Game and participation in an association with responsible positions have an impact on some TBP model components. In particular, the participation in an association with responsible positions is associated with lower levels of EPA. The reason might be again that, since students involved in associations, in particular those with responsible positions, face situations that are similar to entrepreneurial contexts (Fayolle and Gailly 2009) might realize that running a business is more complex than expected.

Results also suggest that Business Games help to inspire and motivate students to become entrepreneurs at early educational stages by making entrepreneurship an attractive and desirable option. Probably the competition involved among students and the ludic and fun aspect of the activity helps to explain this result.

Regarding second year students, we obtain several negative effects, that might cause them demotivation and feeling of lack of support. One possible explanation is that, at this stage, students are more focused on academic aspects, and less concerned about their professional path and employability, and hence are less receptive to these initiatives. The only activity with a positive impact on EI is Design Thinking, again a short duration high-intensive activity, ludic and fun involving competition among students.

The longest of the activities, the project MICE (real-life project with a company during 7 months of the academic year) appears to be very effective in developing both entrepreneurial personal attitude and behavioural control of third year students. A plausible explanation is that these students are close to their entry to the labour market and hence likely to be more receptive to this activity.

Overall, results suggest that activities should concentrate on first and third academic years, i.e. when they appear to have more effect on students' entrepreneurial intentions, and that short duration high-intensive activities, ludic and fun and involving competition among students should be combined with longer but intensive ones in particular at late educational stages.

Additionally, although we cannot claim full support for hypothesis H3, the results offer interesting insights. The only two activities that have a direct positive and significant impact on EI (Business Game and Design Thinking) are very intensive and short, involving competition among students. It is important to note that both activities are compulsory for students enrolled in some programs and there is no risk of self-selection bias (optional activities, in turn, could attract students already highly motivated and competitive towards entrepreneurship). Other characteristics in common are that the learning process is ludic and fun.

These activities (Business Game and Design Thinking) also have a negative impact on PBC. A possible explanation is that, with the simulation, students realize that creating a company is more complex than what they expected. This is in line with previous research, such as Kassean et al. (2015), Lima et al. (2015) and Mentoor and Friedrich (2007). But if this is combined with greater entrepreneurial intentions, as suggested by the model, this has a total positive impact on entrepreneurship, since this might encourage them to acquire the abilities that they still lack.

Of the longer-duration activities (one full year), only Project MICE has a positive impact on EPA and PBC (in third year students). This activity involves a differential element of realism and involvement over the other activities, since they work with existing entrepreneurs on their projects. In turn, Mini-enterprise or *Entreprendre pour Apprendre* seem to be less effective. It may be because the students do not necessarily see the venture they create as something “real”, and only as an academic exercise.

Results also indicate gender differences on the impact of interdisciplinary activities on students’ entrepreneurial intentions: in particular, there are more activities impacting positively on men (3) than women (2), and there are some differences in the activities that show positive impact. In particular, results suggest that participation in associations is particularly effective in increasing women’s entrepreneurial intentions and not men’s. Business Game helps to increase entrepreneurial intentions for both women and men but the impact is on EPA for women while EI for men, and the coefficient and the significance is larger for men. Design Thinking also positively impacts men’s EI and Project MICE positively impacts men’s PBC.

Conclusions

One of the major challenges of any economy is the promotion of entrepreneurial activity and education can play a vital role encouraging entrepreneurship among the young. EE has been shown to have a positive impact on the intentions of young people towards entrepreneurship, their employability and their role in society (EC 2012).

In this study, we examine the role of a particular type of academic activity that have been overlooked by previous research on EE: interdisciplinary academic activities. Entrepreneurship is an act of creativity (Amabile, 1996; Nyström, 1993; Ward, 2004) and we expect that interdisciplinary activities can foster entrepreneurial intentions

among students, since previous research shows that disciplinary group diversity stimulates creativity and innovation (Gardenswartz, 1994; Jackson, 1996; Paulus, 2000; Bassett-Jones, 2005; Alves et al. 2007).

By using Ajzen's (1991) well-established theory of planned behavior and analysing a questionnaire administered to first, second and third-year undergraduate students, we provide empirical evidence of the difference in the effectiveness of interdisciplinary activities to promote entrepreneurship among students. Also, we show that these interdisciplinary activities have a different impact on students' entrepreneurial intentions depending on their educational stage.

The results have important implications for academic institutions providing EE to promote entrepreneurial among students. In particular, results suggest that activities should concentrate on first and third academic years, i.e. when they appear to have more effect on students' entrepreneurial intentions, and that short duration high-intensive activities, ludic and fun and involving competition among students should be combined with longer but intensive ones in particular at late educational stages.

In sum, our findings expand the teaching models framework by empirically testing the outcomes of supply, demand and competence models. These insights may be useful for educators and policy-makers in charge of designing EE strategies, since they shed light upon the interactions between didactic, pedagogical and contextual combinations of entrepreneurial education, contributing hence to covering a gap that has remained scarcely explored. Thus, this study suggests that EE strategies in general and particularly experiential EE may be successful while a proper combination of EE design and implementation meets the particular socio-demographic and contextual factors accompanying it.

Future studies could explore in depth the reasons why some of the activities negatively affect the entrepreneurial intentions of some students. What were their expectations regarding these activities? What did they obtain that is different from what they expected? ...Future research could also examine gender differences in the impact of interdisciplinary activities on students' entrepreneurial intentions.

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